

**Clouds and the Earth's Radiant Energy System
(CERES)**

Data Management System

**CERES ERBE-like Inversion to Instantaneous TOA Fluxes
and Averages to Monthly TOA Fluxes
Subsystems 2.0 and 3.0**

**Release 4 Test Plan
Version 2**

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1.0 Introduction

The Clouds and the Earth's Radiant Energy System (CERES) is a key component of the Earth Observing System (EOS) program. The CERES instrument provides radiometric measurements of the Earth's atmosphere from three broadband channels: a shortwave channel (0.3 - 5 mm), a total channel (0.3 - 200 mm), and an infrared window channel (8 - 12 mm). The CERES instruments are improved models of the Earth Radiation Budget Experiment (ERBE) scanner instruments, which operated from 1984 through 1990 on the National Aeronautics and Space Administration's (NASA) Earth Radiation Budget Satellite (ERBS) and on the National Oceanic and Atmospheric Administration's (NOAA) operational weather satellites NOAA-9 and NOAA-10. The strategy of flying instruments on Sun-synchronous, polar orbiting satellites, such as NOAA-9 and NOAA-10, simultaneously with instruments on satellites that have precessing orbits in lower inclinations, such as ERBS, was successfully developed in ERBE to reduce time sampling errors. CERES continues that strategy by flying instruments on the polar orbiting EOS platforms simultaneously with an instrument on the Tropical Rainfall Measuring Mission (TRMM) spacecraft, which has an orbital inclination of 35 degrees. The TRMM satellite carries one CERES instrument while the EOS satellites carry two CERES instruments, one operating in a fixed azimuth plane scanning mode (FAPS) for continuous Earth sampling and the other operating in a rotating azimuth plane scan mode (RAPS) for improved angular sampling.

1.1 Document Overview

This document, *CERES ERBE-like Inversion to Instantaneous Top-of-the-Atmosphere (TOA) Fluxes and ERBE-like Averaging to Monthly TOA Fluxes Subsystems 2.0 and 3.0 Release 3 Test Plan*, is part of the CERES Subsystems 2.0 and 3.0 Release 3 delivery package provided to the Langley Atmospheric Sciences Data Center (ASDC). It provides a description of the CERES ERBE-like Inversion to Instantaneous TOA Fluxes and ERBE-like Averaging to Monthly TOA Fluxes Release 3 software and explains the procedures for installing, executing, and testing the software. A section is also included on validating the software results. A description of acronyms and abbreviations is provided in [Appendix A](#), a directory structure diagram is contained in [Appendix B](#), and a description of the software and data files is contained in [Appendix C](#).

This document is organized as follows:

[Section 1.0 - Introduction](#)

[Section 2.0 - Software and Data File Installation Procedures](#)

[Section 3.0 - Test and Evaluation Procedures](#)

[Appendix A - Acronyms and Abbreviations](#)

[Appendix B - Directory Structure Diagram](#)

[Appendix C - File Description Tables](#)

1.2 Subsystem Overview

The ERBE-like Subsystems (2.0 and 3.0) mainly come from the ERBE Subsystems V and VI. Details concerning the conversion process from the ERBE to the CERES ERBE-like code may be found in the CERES Software Requirement Documents for Subsystems 2.0 and 3.0 (Reference 1).

The ERBE-like Inversion Subsystem (2.0) calculates estimates of the radiant flux at the top-of-the-atmosphere (TOA) based on satellite altitude data from the Instrument Subsystem (1.0). This inversion process is dependent on several factors, including Earth surface features; the extent of cloudiness; and the relative geometry of the spacecraft, the Sun, and the measurement field-of-view. Each radiometric measurement is spectrally corrected to give an unfiltered measurement. The observed scene is determined by a scene identification algorithm based on these unfiltered measurements; using angular distribution models and statistics provided by the CERES Science Team. Estimates of the radiant flux at the TOA are computed based on scene information, geometrical considerations, and the unfiltered measurements. The output of the Inversion Subsystem includes the ES-8 science archival product and the EID-6 which contains averaged regional data and serves as input for Subsystem 3.0. In addition, daily quality control reports and browse images of selected parameters from the ES-8 product are generated and made available for viewing over the Web following Subsystem 2.0 job completion.

Up to this phase of the processing, data are processed in time-ordered sequence regardless of the location of the measurements. To obtain monthly averages of the radiometric measurements for geographic regions, the data must be made accessible by region. To accomplish this data transition, a Daily Data Base which contains data for an entire month is created to store the time-sequenced inverted data. The data base is comprised of 36 latitudinal data files and a housekeeping file. The housekeeping file provides the necessary information for accessing data from the data base. As each daily EID-6 file from Inversion is processed, individual records are written to one of the 36 latitudinal data files based on region number. After all EID-6 files are processed, a final sort is performed to each of the 36 latitudinal files.

The function of the ERBE-like Monthly Time/Space Averaging Subsystem (3.0) is to produce monthly averages of shortwave and longwave radiant flux at the TOA on a regional basis. These calculations are made at the spatial resolution of a 2.5-degree region on the Earth's surface. These data are processed for each instrument to produce monthly daily averages, monthly hourly averages (each hour averaged for all data during the month), and two grand monthly averages (averages of the daily and monthly hourly averages) for each geographic region. The averages are stored in the ES-9 and then used to produce regional, zonal, and global output products, ES-4/ES-4G. Browse images of selected parameters from the ES-4/ES-4G product are generated from the on-line script and are available for viewing over the Web following Subsystem 3.0 job completion.

1.2.1 CERES ERBE-like Monthly Geo-Scene and Snow Map, and Longwave and Albedo Thresholds

Product Generation Executive (PGE) CER2.1P1 generates a binary input file containing geo-scene types (including snow cover) and albedo and longwave threshold values used by the other ERBE-

like Subsystem 2.0 PGEs. This PGE also generates geo-scene maps as color postscript files and as gif files for display over the Web.

1.2.2 CERES ERBE-like Spectral Response Functions and Correction Coefficients

PGE CER2.4P1 is the ERBE-like processor to generate the Spectral Response Functions and Correction Coefficients data created from an off-line process. This PGE executes scripts which create the Spectral Response Function and Correction Coefficient day and night files needed for input to the ERBE-like daily inversion process.

1.2.3 CERES ERBE-like Daily Inversion for a Single Instrument

PGE CER2.2P1 is the ERBE-like Daily-Processor for combined Fixed Azimuth Plane Scan (FAPS) and Rotating Azimuth Plane Scan (RAPS) data. This PGE executes scripts which create the binary ES-8, the HDF ES-8, the ERBE-like Inversion QC Report, and ES-8 GIF files.

1.2.3.1 CERES ERBE-like Daily Inversion Main-Processor for a Single Instrument

Script, inv, executes the main ERBE-like Inversion daily software for combined Fixed Azimuth Plane Scan (FAPS) and Rotating Azimuth Plane Scan (RAPS) data, and outputs the binary ES-8, the EID-6, and the ERBE-like Inversion QC Report.

1.2.3.2 CERES ERBE-like ES-8 HDF-EOS Generator

Script, gen_es8hdf, converts the binary ES-8 output to HDF-EOS format.

1.2.3.3 CERES ERBE-like Inversion ES-8 GIF File Generator

Web post-processor, plot_es8, uses the binary ES-8 from the ERBE-like Inversion Daily-Processor to generate ES-8 GIF files.

1.2.4 CERES ERBE-like Monthly Inversion for the First Day of the Next Month

PGE CER2.3P1 is the ERBE-like Monthly Overlap-Processor for combined Fixed Azimuth Plane Scan (FAPS) and Rotating Azimuth Plane Scan (RAPS) data from the first day of the next month. This PGE executes scripts which create an overlap EID-6 file, if there is overlap data from the next month.

1.2.5 CERES ERBE-like Monthly Inversion for the Last Day of the Previous Month

PGE CER2.3P2 is the ERBE-like Monthly Overlap-Processor for combined Fixed Azimuth Plane Scan (FAPS) and Rotating Azimuth Plane Scan (RAPS) data from the last day of the previous

month. This PGE executes scripts which create an overlap EID-6 file if there is overlap data from the previous month.

1.2.6 CERES ERBE-like Monthly TOA Flux Averaging for a Single Instrument

PGE CER3.1P1 is the ERBE-like Monthly Averaging Main-Processor for combined Fixed Azimuth Plane Scan (FAPS) and Rotating Azimuth Plane Scan (RAPS) data. It invokes ERBE-like daily data base, monthly time/space averaging, and monthly regional, zonal, and global averaging programs for monthly data processing. It converts binary ES-4G output files from the ERBE-like Monthly Averaging Main-Processor to HDF-EOS format. It converts binary ES-9 output files from the ERBE-like Monthly Averaging Main-Processor to HDF format. It uses the binary ES-4G files from the ERBE-like Monthly Averaging Main-Processor to generate an ES-4 GIF file.

1.2.7 CERES ERBE-like Monthly TOA Flux Averaging for Multiple Instruments

PGE CER3.2P1 is the ERBE-like Monthly Averaging Main-Processor to combine files previously generated from two or more instruments by PGE CER3.1P1.

1.2.8 CERES ERBE-like Monthly Quality Control for Multiple Instruments

PGE CER3.2P2 is the ERBE-like Monthly Averaging Main-Processor to combine files previously generated from two or more instruments by PGE CER3.1P1.

2.0 Software and Data File Installation Procedures

This section describes how to install the ERBE-like software in preparation for making the necessary test runs at the Langley ASDC. The installation procedures include instructions for uncompressed and untarring the delivered tar files, properly defining environmental variables and recompiling the ERBE-like programs.

2.1 Installation

Software/Data File Install Procedure:

1. The scripts, makefiles and Process Control Files in the Subsystems 2.0 and 3.0 delivery package expect the CERES environment variable, **\$CERESENV**, to point to a file which sets the following environment variables:

PGSDIR	- Directory for Toolkit libraries
F90	- Pointer to the SGI F90 64 bit compiler
CERESHOME	- Top Directory for CERES Software
CERESLIB	- Directory for CERESlib
PGMSG	- Directory which contains Toolkit and CERES Status Message Files
PGSLIB	- Directory which contains SGI 64-bit Toolkit library file
F90COMP	- SGI F90 compiler options
PGSINC	- Pointer to the PGS include file directory
HDFDIR	- Pointer to the HDF home directory

2. Change directory to the directory where you plan to install the ERBE-like Subsystems. (The following instructions assume that this directory will be **\$CERESHOME**).
3. Uncompress and untar the tar files.

2.2 Compilation

```
source $CERESENV  
cd $CERESHOME/erbelike/bin
```

To compile ERBE-like PGE software:

```
compile_all
```

To compile ERBE-like comparison software:

```
compile_cmp
```

3.0 Test and Evaluation Procedures

This section provides general information on how to execute Subsystems 2.0 and 3.0 and provides an overview of the test and evaluation procedures. It includes a description of the PGEs being tested and the order in which the tests should be performed.

3.1 CER2.1P1 CERES ERBE-like Monthly Geo-Scene and Snow Map, and Longwave and Albedo Thresholds

3.1.1 Stand-alone Test Procedures

3.1.1.1 PCF Generator

The production script, **CER2.1P1**, references a Process Control File (PCF) which contains the file names and paths for the test procedures. The PCF for the test case is created by executing a combined ASCII file and PCF generator, **gen_pcf.CER2.1P1**.

For production runs, the ASCII file and PCF generator, **gen_pcf.CER2.1P1**, must be executed to create the ASCII input file and PCF for a particular production run. The ASCII file and PCF generator requires one command-line argument, yyyyymm (where yyyy is the 4-digit year, and mm is the 2-digit month).

1. Generate the ASCII input file and the PCF for the test case:

```
cd $CERESHOME/erbelike/data/scr  
source $CERESHOME/erbelike/bin/ENVerbelike-env.csh  
$CERESHOME/erbelike/bin/gen_pcf.CER2.1P1 200210
```

The following files will be generated in **\$CERESHOME/erbelike/rcf/pcf/**:

- **CER2.1P1_PCFin_CERES_Test_000021.200210**
- **CER2.1P1_PCF_CERES_Test_000021.200210**

2. Clean up the test directories:

```
$CERESHOME/erbelike/bin/clr_dir.PGE2.1 200210
```

3.1.1.2 Execution

Execute the production script by typing the script name, **CER2.1P1**, followed by a string which designates the instance of the PCF. The string should be formatted, 'Sampling Strategy'_'Production Strategy'_'Configuration Code'.'Data Date'. The date parameter is formatted, yyyyymm, where yyyy is the 4-digit year and mm is the 2-digit month of the data.

For this test, use Sampling Strategy: CERES, Production
Strategy: Test, Configuration Code: 000021 and Data Date: 200210

\$CERESHOME/erbelike/bin/CER2.1P1 CERES_Test_000021.200210

Product Generation Executive (PGE) CER2.1P1 will be executed and will create:

The following file and associated .met file will be generated in
\$CERESHOME/erbelike/data/ancillary/dynamic/ :

- **CER_SNOW_CERES_Test_000021.200210**

The following file and associated .met file will be generated in
\$CERESHOME/erbelike/data/out_comp/data/snow/ :

- **CER_CQCR_CERES_Test_000021.200210**

The following files will be generated in
\$CERESHOME/erbelike/Web/snow/data/ :

- **CERESweb_200210.map**
- **CERESfmt_200210.map**
- **CERESScr_200210.gif**

The following file will be generated in
\$CERESHOME/erbelike/Web/qc/snow/ :

- **CEREScqcrw_200210.txt**

The following is not a part of the PGE CER2.1P1 and should only be run at the request of the CERES Data Management Team:

Use the script **regen_pict.CER2.1P1** to test the generation of PostScript and GIF files using existing CER2.1P1 generated Snow files. This script requires the command-line arguments yyyyymm (4-digit year and 2-digit month of the data date), Sampling Strategy (\$SS2_1), Production Strategy (\$PS2_1), and Configuration Code (\$CC2_1). An optional argument is yyymmmdd, the creation date of the CER_SNOW file. If omitted, the script will use the date in a UNIX long list of the CER_SNOW file, which can only be checked by viewing the GIF file and examining the Data Processing Date.

\$CERESHOME/erbelike/bin/regen_pict.CER2.1P1 200210 CERES Test 000021 yyymmmdd

This command creates or overwrites the GIF file:

- **\$CERESHOME/erbelike/Web/snow/data/CERESScr_200210.gif**

3.1.1.3 Exit Codes

All CER2.1P1 software terminates using the CERES defined EXIT CODES for the Langley TRMM Information System (LaTIS). Successful completion is indicated by an exit code of 0. This test should complete with “Exit Status = 0”.

3.1.1.4 CER2.1P1 Test Summary

Total Run Time:	0:42 minutes
Memory:	97.5 Megabytes
Required Disk Space:	0.51 Megabytes

3.1.2 Evaluation Procedures

When running the production script, **CER2.1P1**, the system message, “Cannot access <filename>: No such file or directory” may be written to the screen. This message occurs when the script tries to remove an old output file that does not exist. This does not signify a problem.

3.1.2.1 Log and Status File Results

The Error and Status Log Files are located in directory \$CERESHOME/erbelike/data/runlogs after CER2.1P1 has been executed. These files are:

- **CER2.1P1_LogReport_CERES_Test_000021.200210**
- **CER2.1P1_LogStatus_CERES_Test_000021.200210**
- **CER2.1P1_LogUser_CERES_Test_000021.200210**

3.1.2.2 Metadata Evaluation

The metadata files, which end in extension ‘.met’, are located in the same directory as their corresponding output files after CER2.1P1 has been executed. Compare the metadata for the test case with the metadata provided in this delivery, using the diff command:

```
diff $CERESHOME/erbelike/data/ancillary/dynamic/  
    CER_SNOW_CERES_Test_000021.200210.met $CERESHOME/erbelike/data/  
    out_exp/data/snow/CER_SNOW_CERES_Test_000021.200210.met  
  
diff $CERESHOME/erbelike/data/out_comp/data/snow/  
    CER_CQCR_CERES_Test_000021.200210.met $CERESHOME/erbelike/data/  
    out_exp/data/snow/CER_CQCR_CERES_Test_000021.200210.met
```

The only differences between the files should be the production times and the directory paths where the tests were run.

3.1.2.3 Execution of Comparison Software

The CER2.1P1 evaluation software will compare the snow file created from this test and the snow file included in the \$CERESHOME/erbelike/data/out_exp/data/snow directory.

To run the compare program after the SNOW output file has been created at \$CERESHOME/erbelike/data/ancillary/dynamic/:

```
cd $CERESHOME/erbelike/test_suites  
cmp_iigs.exe 200210
```

3.1.2.4 Evaluation of Comparison Software Output

The Snow compare program, **cmp_iigs.exe**, produces the output file cmp_iigs.out. When the files compared are identical, the output file will contain the statement “NO DIFFERENCES FOUND.” If there are any differences, the statement “FILES ARE DIFFERENT” and the conflicting data will be written to the output file.

3.1.3 Solutions to Possible Problems

1. All output files are opened with Status = NEW in the CER2.2P1 software. These files must be removed before rerunning these test procedures. A script, which removes PGE created files, **clr_dir.CER2.1P1**, is located in directory \$CERESHOME/erbelike/bin. Use the data date (4-digit year, 2-digit month) as a command-line argument:

```
$CERESHOME/erbelike/bin/clr_dir.PGE2.1 200210
```

2. If more than 10 days of snow data are not available for the data month, the program will terminate and the target PGEs should not run.
3. Refer to the Message and Log files created in \$CERESHOME/erbelike/data/runlogs for explanations of possible problems.

3.2 CER2.4P1 CERES ERBE-like Spectral Response Functions and Correction Coefficients

3.2.1 Stand-alone Test Procedures

3.2.1.1 PCF Generator

The production script, **CER2.4P1**, references a Process Control File (PCF) which contains the file names and paths for the test procedures. The PCF for the test case is created by executing a combined ASCII file and PCF generator, **gen_pcf.CER2.4P1**.

For production runs, the ASCII file and PCF generator, **gen_pcf.CER2.4P1**, must be executed to create the ASCII input file and PCF for a particular production run. The ASCII file and PCF generator requires two command-line arguments, yyyyymmdd (where yyyy is the 4-digit year, mm is the 2-digit month, and dd is the 2-digit day) and channel_code (where channel_code is the value 1, 2, 3, 12, 13, 23, or 123).

1. Generate the ASCII input file and the PCF for the test case:

```
cd $CERESHOME/erbelike/data/scr  
source $CERESHOME/erbelike/bin/ENVerbelike-env.csh  
$CERESHOME/erbelike/bin/gen_pcf.CER2.4P1 20021015 123
```

The following files will be generated in **\$CERESHOME/erbelike/rcf/pcf/**:

- **CER2.4P1_PCFin_Terra-FM1_Test_000024.20021015**
- **CER2.4P1_PCF_Terra-FM1_Test_000024.20021015**

2. Clean up the test directories:

```
$CERESHOME/erbelike/bin/clr_dir.PGE2.4 20021015
```

3.2.1.2 Execution

Execute the production script by typing the script name, **CER2.4P1**, followed by a string which designates the instance of the PCF. The string should be formatted, 'Sampling Strategy'_'Production Strategy'_'Configuration Code'.'Data Date'. The date parameter is formatted, yyyyymmdd, where yyyy is the 4-digit year, mm is the 2-digit month and dd is the 2-digit day of the data.

For this test, use Sampling Strategy: CERES, Production Strategy: Test, Configuration Code: 000024 and Data Date: 20021015

```
$CERESHOME/erbelike/bin/CER2.4P1 Terra-FM1_Test_000024.20021015
```

Product Generation Executive (PGE) CER2.4P1 will be executed and will create:

The following files and associated .met files will be generated in
\$CERESHOME/erbelike/data/ancillary/dynamic/ :

- **CER_SCCD_Terra-FM1_Test_000024.20021015**
- **CER_SCCN_Terra-FM1_Test_000024.20021015**

The following files will be generated in
\$CERESHOME/erbelike/Web/scc_trend/data/ :

- **SCCtrend_Terra-FM1_Test_SWtrend.web**
- **SCCtrend_Terra-FM1_Test_TOT-SWtrend.web**
- **SCCtrend_Terra-FM1_Test_TOTtrend.web**
- **SCCtrend_Terra-FM1_Test_WNtrend.web**
- **SCCtrend_log_Terra-FM1_Test.20021015**
- **SCCtrend_plot_Terra-FM1_Test.gif**

3.2.1.3 Exit Codes

All CER2.4P1 software terminates using the CERES defined EXIT CODES for the Langley TRMM Information System (LaTIS). Successful completion is indicated by an exit code of 0. This test should complete with “Exit Status = 0”.

3.2.1.4 CER2.4P1 Test Summary

Total Run Time:	49:19 minutes
Memory:	7.5 Megabytes
Required Disk Space:	4480 Megabytes

3.2.2 Evaluation Procedures

When running the production script, **CER2.4P1**, the system message, “Cannot access <filename>: No such file or directory” may be written to the screen. This message occurs when the script tries to remove an old output file that does not exist. This does not signify a problem.

3.2.2.1 Log and Status File Results

The Error and Status Log Files are located in directory \$CERESHOME/erbelike/data/runlogs after CER2.4P1 has been executed. These files are:

- **CER2.4P1_LogReport_Terra-FM1_Test_000024.20021015**
- **CER2.4P1_LogStatus_Terra-FM1_Test_000024.20021015**
- **CER2.4P1_LogUser_Terra-FM1_Test_000024.20021015**

3.2.2.2 Metadata Evaluation

The metadata files, which end in extension ‘.met’, are located in the same directory as their corresponding output files after CER2.4P1 has been executed. Compare the metadata for the test case with the metadata provided in this delivery, using the diff command:

```
diff $CERESHOME/erbelike/data/ancillary/dynamic/CER_SCCD_Terra-
FM1_Test_000024.20021015.met $CERESHOME/erbelike/data/out_exp/data/scc/
CER_SCCD_Terra-FM1_Test_000024.20021015.met
```

```
diff $CERESHOME/erbelike/data/ancillary/dynamic/CER_SCCN_Terra-
FM1_Test_000024.20021015.met $CERESHOME/erbelike/data/out_exp/data/scc/
CER_SCCN_Terra-FM1_Test_000024.20021015.met
```

The only differences between the files should be the production times and the directory paths where the tests were run.

3.2.2.3 Execution of SCCD Comparison Software

The CER2.4P1 evaluation software will compare the Spectral Correction Coefficient day file created from this test and the Spectral Correction Coefficient day file included in the \$CERESHOME/erbelike/data/out_exp/data/scc directory.

To run the compare program after the Spectral Correction Coefficient output file has been created at \$CERESHOME/erbelike/data/ancillary/dynamic/:

```
cd $CERESHOME/erbelike/test_suites
cmp_sccd.exe 20021015
```

3.2.2.4 Evaluation of SCCD Comparison Software Output

The SCCD compare program, **cmp_sccd.exe**, produces the output file cmp_sccd.out. When the files compared are identical, the output file will contain the statement “NO DIFFERENCES FOUND.” If there are any differences, the statement “FILES ARE DIFFERENT” and the conflicting data will be written to the output file.

3.2.2.5 Execution of SCCN Comparison Software

The CER2.4P1 evaluation software will compare the Spectral Correction Coefficient night file created from this test and the Spectral Correction Coefficient night file included in the \$CERESHOME/erbelike/data/out_exp/data/scc directory.

To run the compare program after the Spectral Correction Coefficient output file has been created at \$CERESHOME/erbelike/data/ancillary/dynamic/:

```
cd $CERESHOME/erbelike/test_suites
cmp_sccn.exe 20021015
```

3.2.2.6 Evaluation of SCCN Comparison Software Output

The SCCN compare program, **cmp_sccn.exe**, produces the output file **cmp_sccn.out**. When the files compared are identical, the output file will contain the statement “NO DIFFERENCES FOUND.” If there are any differences, the statement “FILES ARE DIFFERENT” and the conflicting data will be written to the output file.

3.2.2.7 Spectral Response Trend File Evaluation

The spectral response function trend web files end in extension ‘.web’. Compare the web files for the test case with the web files provided in this delivery, using the diff command:

```
diff $CERESHOME/erbelike/Web/scc_trend/data/SCCtrend_Terra-
FM1_Test_SWtrend.web $CERESHOME/erbelike/data/out_exp/data/Web/
scc_trend/data/SCCtrend_Terra-FM1_Test_SWtrend.web

diff $CERESHOME/erbelike/Web/scc_trend/data/SCCtrend_Terra-
FM1_Test_TOT-SWtrend.web $CERESHOME/erbelike/data/out_exp/data/Web/
scc_trend/data/SCCtrend_Terra-FM1_Test_TOT-SWtrend.web

diff $CERESHOME/erbelike/Web/scc_trend/data/SCCtrend_Terra-
FM1_Test_TOTtrend.web $CERESHOME/erbelike/data/out_exp/data/Web/
scc_trend/data/SCCtrend_Terra-FM1_Test_TOTtrend.web

diff $CERESHOME/erbelike/Web/scc_trend/data/SCCtrend_Terra-
FM1_Test_WNtrend.web $CERESHOME/erbelike/data/out_exp/data/Web/
scc_trend/data/SCCtrend_Terra-FM1_Test_WNtrend.web
```

3.2.2.7.1 Evaluation of Spectral Response Trend GIF File

The resulting “gif” image (see [Section 3.2.1.2](#)) must be evaluated by an external viewer, i.e., xv. The CERES Test Coordinator may contact a member of the ERBE-like Subsystem Team to assist in the evaluation of this gif image.

```
cd $CERESHOME/erbelike/Web/scc_trend/data
xv SCCtrend_plot_Terra-FM1_Test.gif &
cd $CERESHOME/erbelike/data/out_exp/data/Web/scc_trend/data
xv SCCtrend_plot_Terra-FM1_Test.gif
```

*Click on each xv window with the right mouse button
Double click matching filenames in both windows and visually compare the two plots.*

3.2.3 Solutions to Possible Problems

1. All output files are opened with Status = NEW in the CER2.4P1 software. These files must be removed before rerunning these test procedures. A script, which removes PGE created files, **clr_dir.CER2.4P1**, is located in directory \$CERESHOME/erbelike/bin. Use the data date (4-digit year, 2-digit month, 2-digit day) as a command-line argument:

\$CERESHOME/erbelike/bin/clr_dir.PGE2.4 20021015

2. Refer to the Message and Log files created in \$CERESHOME/erbelike/data/runlogs for explanations of possible problems.

3.3 CER2.2P1 CERES ERBE-like Daily Inversion for a Single Instrument

3.3.1 Stand-alone Test Procedures

Before starting the processing of CER2.2P1, copy the test preES-8 input file to the testing directory:

```
cp $CERESHOME/erbelike/data/input/CER_PRES8_Terra-
FM1_Edition2_024024.20021021 $CERESHOME/instrument/data/out_comp/
```

3.3.1.1 PCF Generator

The production script, **CER2.2P1**, references a PCF which contains the file names and paths for the test procedures. The PCF for the test case is created by executing a combined ASCII file and PCF generator, **gen_pcf.CER2.2**.

The ASCII file and PCF generator requires five command-line arguments, yyyyymmdd (where yyyy is the 4-digit year, mm is the 2-digit month, and dd is the 2-digit day), “A” for Actual snow input file, “F” for Original ADM structure, “D” for the Instrument Team’s daily modified Slope Intercept Spectral Correction input, and “T” for Thermal SW Offsets.

1. Generate the ASCII input file and PCF for the test case:

```
cd $CERESHOME/erbelike/data/scr
source $CERESHOME/erbelike/bin/ENVerbelike-env.csh
$CERESHOME/erbelike/bin/gen_pcf.CER2.2 20021021 A F M T
```

The following files will be generated in **\$CERESHOME/erbelike/ref/pcf/** :

- **CER2.2P1_PCFin_Terra-FM1_Test_000022.20021021**
- **CER2.2P1_PCF_Terra-FM1_Test_000022.20021021**

2. Clean up the test directories:

```
$CERESHOME/erbelike/bin/clr_dir.PGE2 20021021
```

3.3.1.2 Execution

Execute the production script by typing the script name, **CER2.2P1**, followed by a string which designates the instance of the PCF. The string should be formatted, ’Sampling Strategy’_’Production Strategy’_’Configuration Code’.’Data Date’. The date parameter is formatted, yyyyymmdd, where yyyy is the 4-digit year, mm is the 2-digit month and dd is the 2-digit day of the data.

For this test, use Sampling Strategy: Terra-FM1, Production
Strategy: Test, Configuration Code: 000022 and Data Date: 20021021

\$CERESHOME/erbelike/bin/CER2.2P1 Terra-FM1_Test_000022.20021021

Product Generation Executive (PGE) CER2.2P1 will be executed and will create:

The following files and associated .met files will be generated in
\$CERESHOME/erbelike/data/out_comp/data/inv/ :

- **CER_CQCI_Terra-FM1_Test_000022.20021021**
- **CER_EID6_Terra-FM1_Test_000022.20021021**
- **CER_ES8B_Terra-FM1_Test_000022.20021021**
- **CER_ES8N_Terra-FM1_Test_000022.20021021**
- **CER_ES8_Terra-FM1_Test_000022.20021021**

The following file and associated .met file will be generated in
\$CERESHOME/erbelike/data/runlogs/ :

- **CER_CMSG_Terra-FM1_Test_000022.20021021**

The following file will be generated in
\$CERESHOME/erbelike/Web/qc/inv/ :

- **CER_CQCIM_Terra-FM1.200210**

The following files will be generated in
\$CERESHOME/erbelike/Web/graphics/ES8/gif/ES8_200210_2/ES8_20021021_2/ :

- **ES8_20021021_2_11.gif**
- **ES8_20021021_2_12.gif**
- **ES8_20021021_2_21.gif**
- **ES8_20021021_2_22.gif**
- **ES8_20021021_2_31.gif**
- **ES8_20021021_2_32.gif**
- **ES8_20021021_2_41.gif**
- **ES8_20021021_2_42.gif**
- **ES8_20021021_2_51.gif**
- **ES8_20021021_2_52.gif**
- **ES8_20021021_2_61.gif**
- **ES8_20021021_2_62.gif**
- **ES8_20021021_2_71.gif**
- **ES8_20021021_2_72.gif**
- **ES8_20021021_2_81.gif**
- **ES8_20021021_2_82.gif**
- **ES8_20021021_2_9.gif**

3.3.1.3 Exit Codes

All CER2.2P1 software terminates using the CERES defined EXIT CODES for the Langley TRMM Information System (LaTIS). Successful completion is indicated by an exit code of 0. This test should complete with “Exit Status = 0”.

3.3.1.4 CER2.2P1 Test Summary

Total Run Time:	8:15 minutes
Memory:	546 Megabytes
Required Disk Space:	800 Megabytes

3.3.2 Evaluation Procedures

When running the production script, **CER2.2P1**, the message below may be written to the screen. This message occurs when the QC Checker software finds a problem in the QC Report file and tries to copy the QC Report file and the ES-8 gif files to the /ENG area for Web access. During testing, this does not signify a problem.

**/ENG/CERES/erbelike/Web/qc/inv/ directory is not on this system
QC file will not be copied to Web accessible directory
/ENG/CERES/erbelike/Web/graphics/ES8/gif/ directory is not on this system
ES-8 plots will not be copied to Web accessible directory**

-----**ATTENTION**-----
QC Checker script is Mailing to erbelikeqc@larc.nasa.gov

When running the clear directory script, **clr_dir.PGE2**, the system message, “Cannot access <filename>: No such file or directory” may be written to the screen. This message occurs when the script tries to remove an old output file that does not exist. This does not signify a problem.

3.3.2.1 Log and Status File Results

The Error and Status Log Files are located in directory \$CERESHOME/erbelike/data/runlogs after CER2.2P1 has been executed. These files are:

- **CER2.2P1_LogReport_Terra-FM1_Test_000022.20021021**
- **CER2.2P1_LogStatus_Terra-FM1_Test_000022.20021021**
- **CER2.2P1_LogUser_Terra-FM1_Test_000022.20021021**

3.3.2.2 Metadata Evaluation

The metadata files, which end in extension ‘.met’, are located in the same directory as their corresponding output files after CER2.2P1 has been executed. Compare the metadata for the test case with the metadata provided in this delivery, using the diff command:

```
diff $CERESHOME/erbelike/data/out_comp/data/inv/CER_CQCI_Terra-
FM1_Test_000022.20021021.met $CERESHOME/erbelike/data/out_exp/data/inv/
CER_CQCI_Terra-FM1_Test_000022.20021021.met

diff $CERESHOME/erbelike/data/out_comp/data/inv/CER_EID6_Terra-
FM1_Test_000022.20021021.met $CERESHOME/erbelike/data/out_exp/data/inv/
CER_EID6_Terra-FM1_Test_000022.20021021.met

diff $CERESHOME/erbelike/data/out_comp/data/inv/CER_ES8B_Terra-
FM1_Test_000022.20021021.met $CERESHOME/erbelike/data/out_exp/data/inv/
CER_ES8B_Terra-FM1_Test_000022.20021021.met

diff $CERESHOME/erbelike/data/out_comp/data/inv/CER_ES8N_Terra-
FM1_Test_000022.20021021.met $CERESHOME/erbelike/data/out_exp/data/inv/
CER_ES8N_Terra-FM1_Test_000022.20021021.met

diff $CERESHOME/erbelike/data/out_comp/data/inv/CER_ES8_Terra-
FM1_Test_000022.20021021.met $CERESHOME/erbelike/data/out_exp/data/inv/
CER_ES8_Terra-FM1_Test_000022.20021021.met
```

The only differences between the files should be the production times and the directory paths where the tests were run.

3.3.2.3 Execution of EID-6 Comparison Software

The EID-6 evaluation software will compare the EID-6 file created from this test and the EID-6 file included in the \$CERESHOME/erbelike/data/out_exp/data/inv directory.

To run the compare program after the EID-6 output file has been created at \$CERESHOME/erbelike/data/out_comp/data/inv/:

```
cd $CERESHOME/erbelike/test_suites
cmp_eid6.exe 20021021
```

3.3.2.4 Evaluation of EID-6 Comparison Software Output

The EID-6 compare program, **cmp_eid6.exe**, produces the output file cmp_eid6_20021021.out. When the compared files are identical, the output file will contain the statement “NO

DIFFERENCES FOUND.” If there are any differences, an appropriate message and the conflicting data will be written to the output file.

3.3.2.5 Execution of Binary ES-8 Comparison Software

The binary ES-8 evaluation software will compare the ES-8 file created from this test and the ES-8 file included in the \$CERESHOME/erbelike/data/out_exp/data/inv directory.

To run the compare program after the ES-8 output file has been created at \$CERESHOME/erbelike/data/out_comp/data/inv/:

```
cd $CERESHOME/erbelike/test_suites  
cmp_es8_binary.csh 20021021
```

3.3.2.6 Evaluation of Binary ES-8 Comparison Software Output

The binary ES-8 compare program, **cmp_es8_binary.csh**, produces the output file cmp_es8.out. When the compared files are identical, the output file will contain the statement “NO DIFFERENCES FOUND.” If there are any differences, an appropriate message and the conflicting data will be written to the output file.

3.3.2.7 Execution of ES-8 Nadir Comparison Software

The ES-8 Nadir evaluation software will compare the ES-8 Nadir file created from this test and the ES-8 Nadir file included in the \$CERESHOME/erbelike/data/out_exp/data/inv directory.

To run the compare program after the ES-8 Nadir output file has been created at \$CERESHOME/erbelike/data/out_comp/data/inv/:

```
cd $CERESHOME/erbelike/test_suites  
cmp_es8n.exe 20021021
```

3.3.2.8 Evaluation of ES-8 Nadir Comparison Software Output

The ES-8 Nadir compare program, **cmp_es8n.exe**, produces the output file cmp_es8n.out. When the compared files are identical, the output file will contain the statement “NO DIFFERENCES FOUND.” If there are any differences, an appropriate message and the conflicting data will be written to the output file.

3.3.2.9 Execution of HDF ES-8 Comparison Software

The **compare_hdf.csh** script compiles the provided code and creates an executable, **hcmp**, that compares each Vdata and SDS on an HDF output file. The **compare_hdf.csh** script requires the two file names to be compared as command-line arguments.

Compare the ES8 for the test case:

```
cd $CERESHOME/erbelike/test_suites
compare_hdf.csh $CERESHOME/erbelike/data/out_comp/data/inv/
CER_ES8_Terra-FM1_Test_000022.20021021 $CERESHOME/erbelike/data/
out_exp/data/inv/CER_ES8_Terra-FM1_Test_000022.20021021
```

3.3.2.10 Evaluation of HDF ES-8 Comparison Software Output

The CER2.2P1 HDF ES-8 compare program, **compare_hdf.csh**, produces the output file **hdf_es8.out**. When the files compared are identical, the output file will contain the name of each SDS or Vfield followed by “OK.”. If an SDS or Vfield differs, the output file will contain the name of the SDS or Vfield followed by “***There are data mismatch.***” and the number of data mismatches.

Comparing SDS “.....” data... OK.

or

Comparing Vfield “.....” data... OK.

The only differences between the two HDF output files should be the dates on Vfield: “CERPRODUCTIONDATETIME” on the “CERES_metadata” Vdata. If CERESLIB has changed, the date may be different in the “LOCALVERSIONID” on the “CERES_metadata” Vdata.

3.3.2.11 Execution of the QC Comparison Software

The Daily QC report evaluation software will compare the QC report created from this test and the QC report included in the \$CERESHOME/erbelike/data/out_exp/data/Web/qc/inv directory.

To run the compare program after the QC report has been created at \$CERESHOME/erbelike/Web/qc/inv/:

```
cd $CERESHOME/erbelike/test_suites
diff_CQCIM.csh CER_CQCIM_Terra-FM1.200210
```

3.3.2.12 Evaluation of the QC Comparison Software

When running the Daily QC Comparison script, **diff_CQCIM.csh**, the system message, “checking CER_CQCIM_Terra-FM1.200210 SUCCESS” will be written to the screen when no differences are detected. If there are any differences, an appropriate message and a prompt to see the differences is written to the screen.

3.3.2.13 Evaluation of the Daily QC Checker Software

Daily QC Checker reports are generated and emailed to each member of the ERBE-like Subsystem Team. The CERES Test Coordinator may contact a member of the ERBE-like Subsystem Team to assist in the evaluation of this email report.

3.3.2.14 Execution of Image Comparison Software

The resulting “gif” images (see [Section 3.3.1.2](#)) must be evaluated by an external viewer, i.e., xv. The CERES Test Coordinator may contact a member of the ERBE-like Subsystem Team to assist in the evaluation of these gif images.

```
cd $CERESHOME/erbelike/Web/graphics/ES8/gif/ES8_200210_2/ES8_20021021_2
xv ES8_20021021_2_* &
cd $CERESHOME/erbelike/data/out_exp/data/Web/graphics/ES8/gif/
    ES8_200210_2/ES8_20021021_2
xv ES8_20021021_2_*
Click on each xv window with the right mouse button
Double click matching filenames in both windows and visually compare the two plots.
```

3.3.3 Solutions to Possible Problems

1. All output files are opened with Status = NEW in the CER2.2P1 software. These files must be removed before rerunning these test procedures. A script, which removes PGE created files, **clr_dir.PGE2**, is located in directory \$CERESHOME/erbelike/bin. Use the data date (4-digit year, 2-digit month, 2-digit day) as a command-line argument:

```
$CERESHOME/erbelike/bin/clr_dir.PGE2 20021021
```

2. Refer to the Message and Log files created in \$CERESHOME/erbelike/data/runlogs for explanations of possible problems.

3.4 CER2.3P1 CERES ERBE-like Monthly Inversion for the First Day of the Next Month

3.4.1 Stand-alone Test Procedures

Before starting the processing of CER2.3P1, copy the test preES-8 input file to the testing directory:

```
cp $CERESHOME/erbelike/data/input/CER_PRES8_Terra-
    FM1_Edition2_024024.20021101 $CERESHOME/instrument/data/out_comp/
cp $CERESHOME/erbelike/data/input/CER_SCCD_Terra-
    FM1_Test_000024.20021115 $CERESHOME/erbelike/data/ancillary/dynamic/
cp $CERESHOME/erbelike/data/input/CER_SCCN_Terra-
    FM1_Test_000024.20021115 $CERESHOME/erbelike/data/ancillary/dynamic/
```

3.4.1.1 PCF Generator

The production script, **CER2.3P1**, references a PCF which contains the file names and paths for the test procedures. The PCF for the test case is created by executing a combined ASCII file and PCF generator, **gen_pcf.CER2.3P1**.

The ASCII file and PCF generator requires five command-line arguments, yyyyymmdd (where yyyy is the 4-digit year, mm is the 2-digit month, and dd is the 2-digit day), “A” for Actual snow input file, “F” for Original ADM structure, “D” for the Instrument Team’s daily modified Slope Intercept Spectral Correction input, and “T” for Thermal SW Offsets.

1. Generate the ASCII input file and PCF for the test case:

```
cd $CERESHOME/erbelike/data/scr
source $CERESHOME/erbelike/bin/ENVerbelike-env.csh
$CERESHOME/erbelike/bin/gen_pcf.CER2.3P1 20021101 A F M T
```

The following files will be generated in **\$CERESHOME/erbelike/rcf/pcf/** :

- **CER2.3P1_PCFin_Terra-FM1_Test_000022.20021101**
- **CER2.3P1_PCF_Terra-FM1_Test_000022.20021101**

2. Clean up the test directories:

```
$CERESHOME/erbelike/bin/clr_dir.PGE2.3 20021101
```

3.4.1.2 Execution

Execute the production script by typing the script name, **CER2.3P1**, followed by a string which designates the instance of the PCF. The string should be formatted, 'Sampling Strategy' _ 'Production Strategy' _ 'Configuration Code' . 'Data Date'. The date parameter is formatted, yyyyymmdd, where yyyy is the 4-digit year, mm is the 2-digit month and dd is the 2-digit day of the data.

For this test, use Sampling Strategy: Terra-FM1, Production Strategy: Test, Configuration Code: 000022 and Data Date: 20021101

\$CERESHOME/erbelike/bin/CER2.3P1 Terra-FM1_Test_000022.20021101

Product Generation Executive (PGE) CER2.3P1 will be executed and will create:

The following files and associated .met files will be generated in
\$CERESHOME/erbelike/data/out_comp/data/inv/ :

- **CER_CQCIX_Terra-FM1_Test_000022.20021101**
- **CER_EID6X_Terra-FM1_Test_000022.20021101**

The following files and associated .met files will be generated in
\$CERESHOME/erbelike/data/out_comp/data/ddb/ :

- **CER_CQCD_Terra-FM1_Test_000022.20021101**
- **CER_CXDR_Terra-FM1_Test_000022.20021101**

The following file and associated .met file will be generated in
\$CERESHOME/erbelike/data/runlogs/ :

- **CER_CMSGX_Terra-FM1_Test_000022.20021101**

3.4.1.3 Exit Codes

All CER2.3P1 software terminates using the CERES defined EXIT CODES for the Langley TRMM Information System (LaTIS). Successful completion is indicated by an exit code of 0. This test should complete with "Exit Status = 0".

3.4.1.4 CER2.3P1 Test Summary

Total Run Time:	1:01 minutes
Memory:	5.04 Megabytes
Required Disk Space:	13 Megabytes

3.4.2 Evaluation Procedures

When running the clear directory script, **clr_dir.PGE2.3**, the system message, “Cannot access <filename>: No such file or directory” may be written to the screen. This message occurs when the script tries to remove an old output file that does not exist. This does not signify a problem.

3.4.2.1 Log and Status File Results

The Error and Status Log Files are located in directory \$CERESHOME/erbelike/data/runlogs after CER2.3P1 has been executed. These files are:

- **CER2.3P1_LogReport_Terra-FM1_Test_000022.20021101**
- **CER2.3P1_LogStatus_Terra-FM1_Test_000022.20021101**
- **CER2.3P1_LogUser_Terra-FM1_Test_000022.20021101**

3.4.2.2 Metadata Evaluation

The metadata files, which end in extension ‘.met’, are located in the same directory as their corresponding output files after CER2.3P1 has been executed. Compare the metadata for the test case with the metadata provided in this delivery, using the diff command:

```
diff $CERESHOME/erbelike/data/out_comp/data/inv/CER_CQCIX_Terra-
FM1_Test_000022.20021101.met $CERESHOME/erbelike/data/out_exp/data/inv/
CER_CQCIX_Terra-FM1_Test_000022.20021101.met

diff $CERESHOME/erbelike/data/out_comp/data/inv/CER_EID6X_Terra-
FM1_Test_000022.20021101.met $CERESHOME/erbelike/data/out_exp/data/inv/
CER_EID6X_Terra-FM1_Test_000022.20021101.met

diff $CERESHOME/erbelike/data/out_comp/data/dbb/CER_CXDR_Terra-
FM1_Test_000022.20021101.met $CERESHOME/erbelike/data/out_exp/data/dbb/
CER_CXDR_Terra-FM1_Test_000022.20021101.met

diff $CERESHOME/erbelike/data/out_comp/data/dbb/CER_CQCD_Terra-
FM1_Test_000022.20021101.met $CERESHOME/erbelike/data/out_exp/data/dbb/
CER_CQCD_Terra-FM1_Test_000022.20021101.met
```

The only differences between the files should be the production times and the directory paths where the tests were run.

3.4.2.3 Execution of EID-6 Comparison Software

The EID-6 evaluation software will compare the EID6X file created from this test and the EID6X file included in the \$CERESHOME/erbelike/data/out_exp/data/inv directory.

To run the compare program after the EID6X output file has been created at \$CERESHOME/erbelike/data/out_comp/data/inv/:

```
cd $CERESHOME/erbelike/test_suites  
cmp_eid6.exe 20021101 EID6X
```

3.4.2.4 Evaluation of EID-6 Comparison Software Output

The EID-6 compare program, **cmp_eid6.exe**, produces the output file cmp_eid6_20021101.out. When the compared files are identical, the output file will contain the statement “NO DIFFERENCES FOUND.” If there are any differences, an appropriate message and the conflicting data will be written to the output file.

3.4.3 Solutions to Possible Problems

1. All output files are opened with Status = NEW in the CER2.3P1 software. These files must be removed before rerunning these test procedures. A script, which removes PGE created files, **clr_dir.PGE2.3**, is located in directory \$CERESHOME/erbelike/bin. Use the data date (4-digit year, 2-digit month, 2-digit day) as a command-line argument:

```
$CERESHOME/erbelike/bin/clr_dir.PGE2.3 20021101
```

2. Refer to the Message and Log files created in \$CERESHOME/erbelike/data/runlogs for explanations of possible problems.

3.5 CER2.3P2 CERES ERBE-like Monthly Inversion for the Last Day of the Previous Month

3.5.1 Stand-alone Test Procedures

Before starting the processing of CER2.3P2, copy the test preES-8 input file to the testing directory:

```
cp $CERESHOME/erbelike/data/input/CER_PRES8_Terra-
    FM1_Edition2_024024.20020930 $CERESHOME/instrument/data/out_comp/
cp $CERESHOME/erbelike/data/input/CER_SCCD_Terra-
    FM1_Test_000024.20020915 $CERESHOME/erbelike/data/ancillary/dynamic/
cp $CERESHOME/erbelike/data/input/CER_SCCN_Terra-
    FM1_Test_000024.20020915 $CERESHOME/erbelike/data/ancillary/dynamic/
```

3.5.1.1 PCF Generator

The production script, **CER2.3P2**, references a PCF which contains the file names and paths for the test procedures. The PCF for the test case is created by executing a combined ASCII file and PCF generator, **gen_pcf.CER2.3P2**.

The ASCII file and PCF generator requires five command-line arguments, yyyyymmdd (where yyyy is the 4-digit year, mm is the 2-digit month, and dd is the 2-digit day), “A” for Actual snow input file, “F” for Original ADM structure, “D” for the Instrument Team’s daily modified Slope Intercept Spectral Correction input, and “T” for Thermal SW Offsets.

1. Generate the ASCII input file and PCF for the test case:

```
cd $CERESHOME/erbelike/data/scr
source $CERESHOME/erbelike/bin/ENVerbelike-env.csh
$CERESHOME/erbelike/bin/gen_pcf.CER2.3P2 20020930 A F M T
```

The following files will be generated in **\$CERESHOME/erbelike/rcf/pcf/** :

- **CER2.3P2_PCFin_Terra-FM1_Test_000022.20020930**
- **CER2.3P2_PCF_Terra-FM1_Test_000022.20020930**

2. Clean up the test directories:

```
$CERESHOME/erbelike/bin/clr_dir.PGE2.3 20020930
```

3.5.1.2 Execution

Execute the production script by typing the script name, **CER2.3P2**, followed by a string which designates the instance of the PCF. The string should be formatted, 'Sampling Strategy' _ 'Production Strategy' _ 'Configuration Code' . 'Data Date'. The date parameter is formatted, yyyyymmdd, where yyyy is the 4-digit year, mm is the 2-digit month and dd is the 2-digit day of the data.

For this test, use Sampling Strategy: Terra-FM1, Production Strategy: Test, Configuration Code: 000022 and Data Date: 20020930

\$CERESHOME/erbelike/bin/CER2.3P2 Terra-FM1_Test_000022.20020930

Product Generation Executive (PGE) CER2.3P2 will be executed and will create:

The following files and associated .met files will be generated in
\$CERESHOME/erbelike/data/out_comp/data/inv/ :

- **CER_CQCIX_Terra-FM1_Test_000022.20020930**
- **CER_EID6X_Terra-FM1_Test_000022.20020930**

The following files and associated .met files will be generated in
\$CERESHOME/erbelike/data/out_comp/data/ddb/ :

- **CER_CXDR_Terra-FM1_Test_000022.20020930**
- **CER_CQCD_Terra-FM1_Test_000022.20020930**

The following file and associated .met file will be generated in
\$CERESHOME/erbelike/data/runlogs/ :

- **CER_CMSGX_Terra-FM1_Test_000022.20020930**

3.5.1.3 Exit Codes

All CER2.3P2 software terminates using the CERES defined EXIT CODES for the Langley TRMM Information System (LaTIS). Successful completion is indicated by an exit code of 0. This test should complete with "Exit Status = 0".

3.5.1.4 CER2.3P2 Test Summary

Total Run Time:	1:41 minutes
Memory:	5.3 Megabytes
Required Disk Space:	13 Megabytes

3.5.2 Evaluation Procedures

When running the clear directory script, **clr_dir.PGE2.3**, the system message, “Cannot access <filename>: No such file or directory” may be written to the screen. This message occurs when the script tries to remove an old output file that does not exist. This does not signify a problem.

3.5.2.1 Log and Status File Results

The Error and Status Log Files are located in directory \$CERESHOME/erbelike/data/runlogs after CER2.3P2 has been executed. These files are:

- **CER2.3P2_LogReport_Terra-FM1_Test_000022.20020930**
- **CER2.3P2_LogStatus_Terra-FM1_Test_000022.20020930**
- **CER2.3P2_LogUser_Terra-FM1_Test_000022.20020930**

3.5.2.2 Metadata Evaluation

The metadata files, which end in extension ‘.met’, are located in the same directory as their corresponding output files after CER2.3P2 has been executed. Compare the metadata for the test case with the metadata provided in this delivery, using the diff command:

```
diff $CERESHOME/erbelike/data/out_comp/data/inv/CER_CQCIX_Terra-
FM1_Test_000022.20020930.met $CERESHOME/erbelike/data/out_exp/data/inv/
CER_CQCIX_Terra-FM1_Test_000022.20020930.met

diff $CERESHOME/erbelike/data/out_comp/data/inv/CER_EID6X_Terra-
FM1_Test_000022.20020930.met $CERESHOME/erbelike/data/out_exp/data/inv/
CER_EID6X_Terra-FM1_Test_000022.20020930.met

diff $CERESHOME/erbelike/data/out_comp/data/dbb/CER_CXDR_Terra-
FM1_Test_000022.20020930.met $CERESHOME/erbelike/data/out_exp/data/dbb/
CER_CXDR_Terra-FM1_Test_000022.20020930.met

diff $CERESHOME/erbelike/data/out_comp/data/dbb/CER_CQCD_Terra-
FM1_Test_000022.20020930.met $CERESHOME/erbelike/data/out_exp/data/dbb/
CER_CQCD_Terra-FM1_Test_000022.20020930.met
```

The only differences between the files should be the production times and the directory paths where the tests were run.

3.5.2.3 Execution of EID-6 Comparison Software

The EID-6 evaluation software will compare the EID6X file created from this test and the EID6X file included in the \$CERESHOME/erbelike/data/out_exp/data/inv directory.

To run the compare program after the EID6X output file has been created at \$CERESHOME/erbelike/data/out_comp/data/inv/:

```
cd $CERESHOME/erbelike/test_suites  
cmp_eid6.exe 20020930 EID6X
```

3.5.2.4 Evaluation of EID-6 Comparison Software Output

The EID-6 compare program, **cmp_eid6.exe**, produces the output file cmp_eid6_20020930.out. When the compared files are identical, the output file will contain the statement “NO DIFFERENCES FOUND.” If there are any differences, an appropriate message and the conflicting data will be written to the output file.

3.5.3 Solutions to Possible Problems

1. All output files are opened with Status = NEW in the CER2.3P2 software. These files must be removed before rerunning these test procedures. A script, which removes PGE created files, **clr_dir.PGE2.3**, is located in directory \$CERESHOME/erbelike/bin. Use the data date (4-digit year, 2-digit month, 2-digit day) as a command-line argument:

```
$CERESHOME/erbelike/bin/clr_dir.PGE2.3 20020930
```

2. Refer to the Message and Log files created in \$CERESHOME/erbelike/data/runlogs for explanations of possible problems.

3.6 CER3.1P1 CERES ERBE-like Monthly TOA Flux Averaging for a Single Instrument

3.6.1 Stand-alone Test Procedures

Before starting the processing of CER3.1P1, copy the test EID6 input files to the testing directory:

```
cp $CERESHOME/erbelike/data/input/CER_EID6_Terra-
FM1_Test_000022.200210* $CERESHOME/erbelike/data/out_comp/data/inv
```

3.6.1.1 PCF Generator

The production script, **CER3.1P1**, references a Process Control File (PCF) which contains the file names and paths for the test procedures. The PCF for the test case is created by executing a combined ASCII file and PCF generator, **gen_pcf.CER3.1**.

The PCF generator requires two command-line arguments, yyyyymm (where yyyy is the 4-digit year, and mm is the 2-digit month), and “1” indicating FAPS+RAPS data.

1. Generate the ASCII input file and PCF for the test case:

```
cd $CERESHOME/erbelike/data/scr
source $CERESHOME/erbelike/bin/ENVerbelike-env.csh
$CERESHOME/erbelike/bin/gen_pcf.CER3.1 200210 1
```

When running the **gen_pcf.CER3.1** script, the system message, “Cannot access <filename>: No such file or directory” may be written to the screen. This message occurs when the overlap data files do not exist. This does not signify a problem, the overlap files are optional.

The following files will be generated in **\$CERESHOME/erbelike/rcf/pcf/**:

- **CER3.1P1_PCFin_Terra-FM1_Test_000031.200210**
- **CER3.1P1_PCF_Terra-FM1_Test_000031.200210**

2. Clean up the test directories:

```
$CERESHOME/erbelike/bin/clr_dir.PGE3 200210
```

3.6.1.2 Execution

Execute the production script by typing the script name, **CER3.1P1**, followed by a string which designates the instance of the PCF. The string should be formatted, ‘Sampling Strategy’_‘Production Strategy’_‘Configuration Code’.’Data Date’. The date parameter is formatted, yyyyymm, where yyyy is the 4-digit year and mm is the 2-digit month of the data.

For this test, use Sampling Strategy: Terra-FM1, Production
Strategy: Test, Configuration Code: 000031 and Data Date: 200210

\$CERESHOME/erbelike/bin/CER3.1P1 Terra-FM1_Test_000031.200210

Product Generation Executive (PGE) CER3.1P1 will be executed and will create:

The following files and associated .met files will be generated in
\$CERESHOME/erbelike/data/out_comp/data/dbb/ :

- **CER_DQCD_Terra-FM1_Test_000031.200210**
- **CER_DQCS_Terra-FM1_Test_000031.200210**
- **CER_DQCX_Terra-FM1_Test_000031.200210**

The following files and associated .met files will be generated in
\$CERESHOME/erbelike/data/out_comp/data/mtsa/ :

- **CER_DES9_Terra-FM1_Test_000031.200210**
- **CER_ES9_Terra-FM1_Test_000031.200210**
- **CER_DQCA_Terra-FM1_Test_000031.200210**
- **CER_DQCB_Terra-FM1_Test_000031.200210**
- **CER_DQCC_Terra-FM1_Test_000031.200210**

The following files and associated .met files will be generated in
\$CERESHOME/erbelike/data/out_comp/data/s4/ :

- **CER_DES4_Terra-FM1_Test_000031.200210**
- **CER_ES4_Terra-FM1_Test_000031.200210**
- **CER_ES4G1_Terra-FM1_Test_000031.200210**
- **CER_ES4G2_Terra-FM1_Test_000031.200210**
- **CER_ES4G3_Terra-FM1_Test_000031.200210**
- **CER_ES4G4_Terra-FM1_Test_000031.200210**
- **CER_DQCG_Terra-FM1_Test_000031.200210**

The following file and associated .met file will be generated in
\$CERESHOME/erbelike/data/runlogs/ :

- **CER_DMSG_Terra-FM1_Test_000031.200210**

The following files will be generated in

\$CERESHOME/erbelike/Web/graphics/ES4/gif/S4G_200210_2/ :

- **MH_ALB_R2520.gif**
- **MH_CS_ALB_R2520.gif**
- **MH_CS_LW_R2520.gif**
- **MH_CS_SW_R2520.gif**
- **MH_LW_CF_R2520.gif**
- **MH_LW_R2520.gif**
- **MH_NET_CF_R2520.gif**
- **MH_SW_CF_R2520.gif**
- **MH_SW_R2520.gif**

The following file will be generated in

\$CERESHOME/erbelike/Web/qc/mtsa/ :

- CER_DQCBW_Terra-FM1_Test_000031.200210

The following file will be generated in

\$CERESHOME/erbelike/Web/qc/s4/ :

- CER_DQCGW_Terra-FM1_Test_000031.200210

The following file will be generated in

\$CERESHOME/erbelike/Web/es4_stats/data/ :

- DQCG_Stats_Terra-FM1_Test.web
- DQCG_Stats_Terra-FM1_Test_0d.gif
- DQCG_Stats_Terra-FM1_Test_1d.gif
- DQCG_Stats_Terra-FM1_Test_2d.gif
- DQCG_Stats_Terra-FM1_Test_3d.gif
- Monthly_LW_Stats_Terra-FM1_Test.web
- Monthly_LW_Stats_Terra-FM1_Test_0d.gif
- Monthly_LW_Stats_Terra-FM1_Test_0i.gif
- Monthly_LW_Stats_Terra-FM1_Test_0m.gif
- Monthly_LW_Stats_Terra-FM1_Test_0n.gif
- Monthly_LW_Stats_Terra-FM1_Test_1d.gif
- Monthly_LW_Stats_Terra-FM1_Test_1i.gif
- Monthly_LW_Stats_Terra-FM1_Test_1m.gif
- Monthly_LW_Stats_Terra-FM1_Test_1n.gif
- Monthly_LW_Stats_Terra-FM1_Test_2d.gif
- Monthly_LW_Stats_Terra-FM1_Test_2i.gif
- Monthly_LW_Stats_Terra-FM1_Test_2m.gif
- Monthly_LW_Stats_Terra-FM1_Test_2n.gif
- Monthly_SW_Stats_Terra-FM1_Test.web
- Monthly_SW_Stats_Terra-FM1_Test_0d.gif
- Monthly_SW_Stats_Terra-FM1_Test_0i.gif
- Monthly_SW_Stats_Terra-FM1_Test_1d.gif
- Monthly_SW_Stats_Terra-FM1_Test_1i.gif
- Monthly_SW_Stats_Terra-FM1_Test_2d.gif
- Monthly_SW_Stats_Terra-FM1_Test_2i.gif
- Monthly_Stats_log_Terra-FM1_Test.200210

3.6.1.3 Exit Codes

All CER3.1P1 software terminates using the CERES defined EXIT CODES for the Langley TRMM Information System (LaTIS). Successful completion is indicated by an exit code of 0. This test should complete with “Exit Status = 0”.

3.6.1.4 CER3.1P1 Test Summary

Total Run Time:	8:57 minutes
Memory:	288 Megabytes
Required Disk Space:	76 Megabytes

3.6.2 Evaluation Procedures

When running the clear directory script, **clr_dir.PGE3**, the system message, “Cannot access <filename>: No such file or directory” may be written to the screen. This message occurs when the script tries to remove an old output file that does not exist. This does not signify a problem.

3.6.2.1 Log and Status File Results

The Error and Status Log Files are located in directory \$CERESHOME/erbelike/data/runlogs after CER3.1P1 has been executed. These files are:

- **CER3.1P1_LogReport_Terra-FM1_Test_000031.200210**
- **CER3.1P1_LogStatus_Terra-FM1_Test_000031.200210**
- **CER3.1P1_LogUser_Terra-FM1_Test_000031.200210**

3.6.2.2 Metadata Evaluation

The metadata files, which end in extension ‘.met’, are located in the same directory as their corresponding output files after CER3.1P1 has been executed. Compare the metadata for the test case with the metadata provided in this delivery, using the diff command:

```
diff $CERESHOME/erbelike/data/out_comp/data/mtsa/CER_DES9_Terra-
FM1_Test_000031.200210.met $CERESHOME/erbelike/data/out_exp/data/mtsa/
CER_DES9_Terra-FM1_Test_000031.200210.met
```

```
diff $CERESHOME/erbelike/data/out_comp/data/s4/CER_DES4_Terra-
FM1_Test_000031.200210.met $CERESHOME/erbelike/data/out_exp/data/s4/
CER_DES4_Terra-FM1_Test_000031.200210.met
```

The only differences between the files should be the production times and the directory paths where the tests were run.

3.6.2.3 Output Data Evaluation

3.6.2.3.1 Execution of Binary ES-9 Comparison Software

The binary ES-9 evaluation software will compare the ES-9 file created from this test with the ES-9 file included in the \$CERESHOME/erbelike/data/out_exp/data/mtsa/ directory. The ES-9

evaluation software requires one command-line argument, yyyyymm, where yyyy is the 4-digit year, and mm is the 2-digit month.

To run the compare program after the ES-9 output file has been created at \$CERESHOME/erbelike/data/out_comp/data/mtsa/:

```
cd $CERESHOME/erbelike/test_suites  
cmp_es9.exe 200210
```

3.6.2.3.2 Evaluation of Binary ES-9 Comparison Software

The binary ES-9 compare program, **cmp_es9.exe**, produces the output file cmp_es9.out. When the files compared are identical, the output file will contain the statement “NO DIFFERENCES FOUND.” If there are any differences, an appropriate message and the conflicting data are written to the output file.

3.6.2.3.3 Execution of Binary ES-4 Comparison Software

The binary ES-4 evaluation software will compare the ES-4 file created from this test with the ES-4 file included in the \$CERESHOME/erbelike/data/out_exp/data/s4/ directory. The ES-4 evaluation software requires one command-line argument, yyyyymm, where yyyy is the 4-digit year, and mm is the 2-digit month.

To run the compare program after the ES-4 output file has been created at \$CERESHOME/erbelike/data/out_comp/data/s4/:

```
cd $CERESHOME/erbelike/test_suites  
cmp_es4.exe 200210
```

3.6.2.3.4 Evaluation of Binary ES-4 Comparison Software

The binary ES-4 compare program, **cmp_es4.exe**, produces the output file cmp_es4.out. When the files compared are identical, the output file will contain the statement “NO DIFFERENCES FOUND.” If there are any differences, an appropriate message and the conflicting data are written to the output file.

3.6.2.3.5 Execution of HDF ES-9 Comparison Software

The **compare_hdf.csh** script compiles the provided code and creates an executable, **hcmp**, that compares each Vdata and SDS on an HDF output file. The **compare_hdf.csh** script requires the two file names to be compared as command-line arguments.

Compare the ES9 for the test case:

```
cd $CERESHOME/erbelike/test_suites
compare_hdf.csh $CERESHOME/erbelike/data/out_comp/data/mtsa/
    CER_ES9_Terra-FM1_Test_000031.200210 $CERESHOME/erbelike/data/
        out_exp/data/mtsa/CER_ES9_Terra-FM1_Test_000031.200210
```

3.6.2.3.6 Evaluation of HDF ES-9 Comparison Software

The CER3.1P1 HDF ES-9 compare program, **compare_hdf.csh**, produces the output file **hdf_es9.out**. When the files compared are identical, the output file will contain the name of each SDS or Vfield followed by “OK.”. If an SDS or Vfield differs, the output file will contain the name of the SDS or Vfield followed by “***There are data mismatch.***” and the number of data mismatches.

Comparing SDS “.....” data... OK.

or

Comparing Vfield “.....” data... OK.

The only differences between the two HDF output files should be the dates on Vfield: “CERPRODUCTIONDATETIME” on the “CERES_metadata” Vdata. If CERESLIB has changed, the date may be different in the “LOCALVERSIONID” on the “CERES_metadata” Vdata.

3.6.2.3.7 Execution of HDF ES-4 Comparison Software

The **compare_hdf.csh** script compiles the provided code and creates an executable, **hcmp**, that compares each Vdata and SDS on an HDF output file. The **compare_hdf.csh** script requires the two file names to be compared as command-line arguments.

Compare the ES4 for the test case:

```
cd $CERESHOME/erbelike/test_suites
compare_hdf.csh $CERESHOME/erbelike/data/out_comp/data/s4/
    CER_ES4_Terra-FM1_Test_000031.200210 $CERESHOME/erbelike/data/
        out_exp/data/s4/CER_ES4_Terra-FM1_Test_000031.200210
```

Note: Total Run Time: approx. 25 minutes

3.6.2.3.8 Evaluation of HDF ES-4 Comparison Software

The CER3.1P1 HDF ES-4 compare program, **compare_hdf.csh**, produces the output file **hdf_es4.out**. When the files compared are identical, the output file will contain the name of each SDS or Vfield followed by “OK.”. If an SDS or Vfield differs, the output file will contain the name of the SDS or Vfield followed by “***There are data mismatch.***” and the number of data mismatches.

Comparing SDS “.....” data... OK.

or

Comparing Vfield “.....” data... OK.

The only differences between the two HDF output files should be the dates on Vfield: “CERPRODUCTIONDATETIME” on the “CERES_metadata” Vdata. If CERESLIB has changed, the date may be different in the “LOCALVERSIONID” on the “CERES_metadata” Vdata.

3.6.2.3.9 Evaluation of ES-4 GIF Files

The resulting “gif” images (see [Section 3.6.1.2](#)) must be evaluated by an external viewer, i.e., xv. The CERES Test Coordinator may contact a member of the ERBE-like Subsystem Team to assist in the evaluation of these gif images.

```
cd $CERESHOME/erbelike/Web/graphics/ES4/gif/S4G_200210_2
xv MH_*_R2520.gif &
cd $CERESHOME/erbelike/data/out_exp/data/Web/graphics/ES4/gif/
S4G_200210_2
xv MH_*_R2520.gif
```

*Click on each xv window with the right mouse button
Double click matching filenames in both windows and visually compare the two plots.*

3.6.2.3.10 Evaluation of ES-4 Statistical Trend GIF Files

The resulting “gif” images (see [Section 3.6.1.2](#)) must be evaluated by an external viewer, i.e., xv. The CERES Test Coordinator may contact a member of the ERBE-like Subsystem Team to assist in the evaluation of these gif images.

```
cd $CERESHOME/erbelike/Web/es4_stats/data
xv *Terra-FM1_Test_*.gif &
cd $CERESHOME/erbelike/data/out_exp/data/Web/es4_stats/data
xv *Terra-FM1_Test_*.gif
```

*Click on each xv window with the right mouse button
Double click matching filenames in both windows and visually compare the two plots.*

3.6.3 Solutions to Possible Problems

1. All output files are opened with Status = NEW in the CER3.1P1 software. These files must be removed before rerunning these test procedures. A script, which removes PGE created files, **clr_dir.PGE3**, is located in directory \$CERESHOME/erbelike/bin. Use the data date (4-digit year, 2-digit month) as a command-line argument:

\$CERESHOME/erbelike/bin/clr_dir.PGE3 200210

2. Refer to the Message and Log files created in \$CERESHOME/erbelike/data/runlogs for explanations of possible problems.

3.7 CER3.2P1 CERES ERBE-like Monthly TOA Flux Averaging for Multiple Instruments (FM1+FM2+FM3+FM4)

3.7.1 Stand-alone Test Procedures

Before starting the processing of CER3.2P1, copy the test binary ES-9 input files to the testing directory:

```
cp $CERESHOME/erbelike/data/input/CER_DES9_Terra-
    FM2_Edition1_021019.200210 $CERESHOME/erbelike/data/out_comp/data/
        mtsa
cp $CERESHOME/erbelike/data/input/CER_DES9_Aqua-
    FM3_Beta2_021019.200210 $CERESHOME/erbelike/data/out_comp/data/mtsa
cp $CERESHOME/erbelike/data/input/CER_DES9_Aqua-
    FM4_Edition1_021019.200210 $CERESHOME/erbelike/data/out_comp/data/
        mtsa
```

3.7.1.1 PCF Generator

The production script, **CER3.2P1**, references a Process Control File (PCF) which contains the file names and paths for the test procedures. The PCF for the test case is created by executing a combined ASCII file and PCF generator, **gen_pcf.CER3.2**.

The PCF generator requires two command-line arguments, yyyyymm (where yyyy is the 4-digit year, and mm is the 2-digit month), and “1” indicating FAPS+RAPS data.

1. Generate the ASCII input file and PCF for the test case:

```
cd $CERESHOME/erbelike/data/scr
source $CERESHOME/erbelike/bin/ENVerbelike-env4.csh
$CERESHOME/erbelike/bin/gen_pcf.CER3.2 200210 1
```

The following files will be generated in **\$CERESHOME/erbelike/rcf/pcf/** :

- **CER3.2P1_PCFin_FM1+FM2+FM3+FM4_Test_000032.200210**
- **CER3.2P1_PCF_FM1+FM2+FM3+FM4_Test_000032.200210**

2. Clean up the test directories:

```
$CERESHOME/erbelike/bin/clr_dir.PGE3.2 200210
```

3.7.1.2 Execution

Execute the production script by typing the script name, **CER3.2P1**, followed by a string which designates the instance of the PCF. The string should be formatted, 'Sampling Strategy' _ 'Production Strategy' _ 'Configuration Code' . 'Data Date'. The date parameter is formatted, yyyyymm, where yyyy is the 4-digit year and mm is the 2-digit month of the data.

For this test, use Sampling Strategy: FM1+FM2+FM3+FM4, Production Strategy: Test, Configuration Code: 000032 and Data Date: 200210

```
$CERESHOME/erbelike/bin/CER3.2P1
FM1+FM2+FM3+FM4_Test_000032.200210
```

Product Generation Executive (PGE) CER3.2P1 will be executed and will create:

The following files and associated .met files will be generated in
\$CERESHOME/erbelike/data/out_comp/data/mtsa/ :

- **CER_DES9_FM1+FM2+FM3+FM4_Test_000032.200210**
- **CER_ES9_FM1+FM2+FM3+FM4_Test_000032.200210**
- **CER_DQCA_FM1+FM2+FM3+FM4_Test_000032.200210**
- **CER_DQCB_FM1+FM2+FM3+FM4_Test_000032.200210**
- **CER_DQCC_FM1+FM2+FM3+FM4_Test_000032.200210**

The following files and associated .met files will be generated in
\$CERESHOME/erbelike/data/out_comp/data/s4/ :

- **CER_DES4_FM1+FM2+FM3+FM4_Test_000032.200210**
- **CER_ES4_FM1+FM2+FM3+FM4_Test_000032.200210**
- **CER_ES4G1_FM1+FM2+FM3+FM4_Test_000032.200210**
- **CER_ES4G2_FM1+FM2+FM3+FM4_Test_000032.200210**
- **CER_ES4G3_FM1+FM2+FM3+FM4_Test_000032.200210**
- **CER_ES4G4_FM1+FM2+FM3+FM4_Test_000032.200210**
- **CER_DQCG_FM1+FM2+FM3+FM4_Test_000032.200210**

The following file and associated .met file will be generated in
\$CERESHOME/erbelike/data/runlogs/ :

- **CER_DMSG_FM1+FM2+FM3+FM4_Test_000032.200210**

The following files will be generated in

\$CERESHOME/erbelike/Web/graphics/ES4/gif/S4G_200210_2345/ :

- **MH_ALB_R2520.gif**
- **MH_CS_ALB_R2520.gif**
- **MH_CS_LW_R2520.gif**
- **MH_CS_SW_R2520.gif**
- **MH_LW_CF_R2520.gif**
- **MH_LW_R2520.gif**
- **MH_NET_CF_R2520.gif**

- **MH_SW_CF_R2520.gif**
- **MH_SW_R2520.gif**

The following file will be generated in

\$CERESHOME/erbelike/Web/qc/mtsa/ :

- **CER_DQCBW_FM1+FM2+FM3+FM4_Test_000032.200210**

The following file will be generated in

\$CERESHOME/erbelike/Web/qc/s4/ :

- **CER_DQCGW_FM1+FM2+FM3+FM4_Test_000032.200210**

The following file will be generated in

\$CERESHOME/erbelike/Web/es4_stats/data/ :

- **DQCG_Stats_FM1+FM2+FM3+FM4_Test.web**
- **DQCG_Stats_FM1+FM2+FM3+FM4_Test_0d.gif**
- **DQCG_Stats_FM1+FM2+FM3+FM4_Test_1d.gif**
- **DQCG_Stats_FM1+FM2+FM3+FM4_Test_2d.gif**
- **DQCG_Stats_FM1+FM2+FM3+FM4_Test_3d.gif**
- **Monthly_LW_Stats_FM1+FM2+FM3+FM4_Test.web**
- **Monthly_LW_Stats_FM1+FM2+FM3+FM4_Test_0d.gif**
- **Monthly_LW_Stats_FM1+FM2+FM3+FM4_Test_0i.gif**
- **Monthly_LW_Stats_FM1+FM2+FM3+FM4_Test_0m.gif**
- **Monthly_LW_Stats_FM1+FM2+FM3+FM4_Test_0n.gif**
- **Monthly_LW_Stats_FM1+FM2+FM3+FM4_Test_1d.gif**
- **Monthly_LW_Stats_FM1+FM2+FM3+FM4_Test_1i.gif**
- **Monthly_LW_Stats_FM1+FM2+FM3+FM4_Test_1m.gif**
- **Monthly_LW_Stats_FM1+FM2+FM3+FM4_Test_1n.gif**
- **Monthly_LW_Stats_FM1+FM2+FM3+FM4_Test_2d.gif**
- **Monthly_LW_Stats_FM1+FM2+FM3+FM4_Test_2i.gif**
- **Monthly_LW_Stats_FM1+FM2+FM3+FM4_Test_2m.gif**
- **Monthly_LW_Stats_FM1+FM2+FM3+FM4_Test_2n.gif**
- **Monthly_SW_Stats_FM1+FM2+FM3+FM4_Test.web**
- **Monthly_SW_Stats_FM1+FM2+FM3+FM4_Test_0d.gif**
- **Monthly_SW_Stats_FM1+FM2+FM3+FM4_Test_0i.gif**
- **Monthly_SW_Stats_FM1+FM2+FM3+FM4_Test_1d.gif**
- **Monthly_SW_Stats_FM1+FM2+FM3+FM4_Test_1i.gif**
- **Monthly_SW_Stats_FM1+FM2+FM3+FM4_Test_2d.gif**
- **Monthly_SW_Stats_FM1+FM2+FM3+FM4_Test_2i.gif**
- **Monthly_Stats_log_FM1+FM2+FM3+FM4_Test.200210**

3.7.1.3 Exit Codes

All CER3.2P1 software terminates using the CERES defined EXIT CODES for the Langley TRMM Information System (LaTIS). Successful completion is indicated by an exit code of 0. This test should complete with “Exit Status = 0”.

3.7.1.4 CER3.2P1 Test Summary

Total Run Time:	6:39 minutes
Memory:	452 Megabytes
Required Disk Space:	45 Megabytes

3.7.2 Evaluation Procedures

When running the clear directory script, **clr_dir.PGE3.2**, the system message, “Cannot access <filename>: No such file or directory” may be written to the screen. This message occurs when the script tries to remove an old output file that does not exist. This does not signify a problem.

3.7.2.1 Log and Status File Results

The Error and Status Log Files are located in directory \$CERESHOME/erbelike/data/runlogs after CER3.2P1 has been executed. These files are:

- **CER3.2P1_LogReport_FM1+FM2+FM3+FM4_Test_000032.200210**
- **CER3.2P1_LogStatus_FM1+FM2+FM3+FM4_Test_000032.200210**
- **CER3.2P1_LogUser_FM1+FM2+FM3+FM4_Test_000032.200210**

3.7.2.2 Metadata Evaluation

The metadata files, which end in extension ‘.met’, are located in the same directory as their corresponding output files after CER3.2P1 has been executed. Compare the metadata for the test case with the metadata provided in this delivery, using the diff command:

```
diff $CERESHOME/erbelike/data/out_comp/data/mtsa/  
CER_DES9_FM1+FM2+FM3+FM4_Test_000032.200210.met $CERESHOME/  
erbelike/data/out_exp/data/mtsa/  
CER_DES9_FM1+FM2+FM3+FM4_Test_000032.200210.met  
  
diff $CERESHOME/erbelike/data/out_comp/data/s4/  
CER_DES4_FM1+FM2+FM3+FM4_Test_000032.200210.met $CERESHOME/  
erbelike/data/out_exp/data/s4/  
CER_DES4_FM1+FM2+FM3+FM4_Test_000032.200210.met
```

The only differences between the files should be the production times and the directory paths where the tests were run.

3.7.2.3 Output Data Evaluation

3.7.2.3.1 Execution of Binary ES-9 Comparison Software

The binary ES-9 evaluation software will compare the ES-9 file created from this test with the ES-9 file included in the \$CERESHOME/erbelike/data/out_exp/data/mtsa/ directory. The ES-9 evaluation software requires one command-line argument, yyyyymm, where yyyy is the 4-digit year, and mm is the 2-digit month.

To run the compare program after the ES-9 output file has been created at \$CERESHOME/erbelike/data/out_comp/data/mtsa/:

```
cd $CERESHOME/erbelike/test_suites  
cmp_mes9.exe 200210
```

3.7.2.3.2 Evaluation of Binary ES-9 Comparison Software

The binary ES-9 compare program, **cmp_mes9.exe**, produces the output file cmp_mes9.out. When the files compared are identical, the output file will contain the statement “NO DIFFERENCES FOUND.” If there are any differences, an appropriate message and the conflicting data are written to the output file.

3.7.2.3.3 Execution of Binary ES-4 Comparison Software

The binary ES-4 evaluation software will compare the ES-4 file created from this test with the ES-4 file included in the \$CERESHOME/erbelike/data/out_exp/data/s4/ directory. The ES-4 evaluation software requires one command-line argument, yyyyymm, where yyyy is the 4-digit year, and mm is the 2-digit month.

To run the compare program after the ES-4 output file has been created at \$CERESHOME/erbelike/data/out_comp/data/s4/:

```
cd $CERESHOME/erbelike/test_suites  
cmp_mes4.exe 200210
```

3.7.2.3.4 Evaluation of Binary ES-4 Comparison Software

The binary ES-4 compare program, **cmp_mes4.exe**, produces the output file cmp_mes4.out. When the files compared are identical, the output file will contain the statement “NO DIFFERENCES FOUND.” If there are any differences, an appropriate message and the conflicting data are written to the output file.

3.7.2.3.5 Execution of HDF ES-9 Comparison Software

The **compare_hdf.csh** script compiles the provided code and creates an executable, **hcmp**, that compares each Vdata and SDS on the ES9 HDF output file. The **compare_hdf.csh** script requires the two file names to be compared as command-line arguments.

Compare the ES9 for the test case:

```
cd $CERESHOME/erbelike/test_suites
compare_hdf.csh $CERESHOME/erbelike/data/out_comp/data/mtsa/
    CER_ES9_FM1+FM2+FM3+FM4_Test_000032.200210 $CERESHOME/erbelike/
        data/out_exp/data/mtsa/CER_ES9_FM1+FM2+FM3+FM4_Test_000032.200210
```

3.7.2.3.6 Evaluation of HDF ES-9 Comparison Software

The CER3.2P1 HDF ES-9 compare program, **compare_hdf.csh**, produces the output file **hdf_es9.out**. When the files compared are identical, the output file will contain the name of each SDS or Vfield followed by “OK.”. If an SDS or Vfield differs, the output file will contain the name of the SDS or Vfield followed by “***There are data mismatch.***” and the number of data mismatches.

Comparing SDS “.....” data... OK.

or

Comparing Vfield “.....” data... OK.

The only differences between the two HDF output files should be the dates on Vfield: “CERPRODUCTIONDATETIME” on the “CERES_metadata” Vdata. If CERESLIB has changed, the date may be different in the “LOCALVERSIONID” on the “CERES_metadata” Vdata.

3.7.2.3.7 Execution of HDF ES-4 Comparison Software

The **compare_hdf.csh** script compiles the provided code and creates an executable, **hcmp**, that compares each Vdata and SDS on the ES4 HDF output file. The **compare_hdf.csh** script requires the two file names to be compared as command-line arguments.

Compare the ES4 for the test case:

```
cd $CERESHOME/erbelike/test_suites
compare_hdf.csh $CERESHOME/erbelike/data/out_comp/data/s4/
    CER_ES4_FM1+FM2+FM3+FM4_Test_000032.200210 $CERESHOME/erbelike/
        data/out_exp/data/s4/CER_ES4_FM1+FM2+FM3+FM4_Test_000032.200210
```

Note: Total Run Time: approx. 25 minutes

3.7.2.3.8 Evaluation of HDF ES-4 Comparison Software

The CER3.2P1 HDF ES-4 compare program, **compare_hdf.csh**, produces the output file **hdf_es4.out**. When the files compared are identical, the output file will contain the name of each SDS or Vfield followed by “OK.”. If an SDS or Vfield differs, the output file will contain the name of the SDS or Vfield followed by “***There are data mismatch.***” and the number of data mismatches.

Comparing SDS “.....” data... OK.

or

Comparing Vfield “.....” data... OK.

The only differences between the two HDF output files should be the dates on Vfield: “CERPRODUCTIONDATETIME” on the “CERES_metadata” Vdata. If CERESLIB has changed, the date may be different in the “LOCALVERSIONID” on the “CERES_metadata” Vdata.

3.7.2.3.9 Evaluation of ES-4 GIF Files

The resulting “gif” images (see [Section 3.7.1.2](#)) must be evaluated by an external viewer, i.e., xv. The CERES Test Coordinator may contact a member of the ERBE-like Subsystem Team to assist in the evaluation of these gif images.

```
cd $CERESHOME/erbelike/Web/graphics/ES4/gif/S4G_200210_2345
xv MH_*R2520.gif &
cd $CERESHOME/erbelike/data/out_exp/data/Web/graphics/ES4/gif/
S4G_200210_2345
xv MH_*R2520.gif
Click on each xv window with the right mouse button
Double click matching file names in both windows and visually compare the two plots.
```

3.7.2.3.10 Evaluation of ES-4 Statistical Trend GIF Files

The resulting “gif” images (see [Section 3.7.1.2](#)) must be evaluated by an external viewer, i.e., xv. The CERES Test Coordinator may contact a member of the ERBE-like Subsystem Team to assist in the evaluation of these gif images.

```
cd $CERESHOME/erbelike/Web/es4_stats/data
xv *FM1+FM2+FM3+FM4_Test*.gif &
cd $CERESHOME/erbelike/data/out_exp/data/Web/es4_stats/data
xv *FM1+FM2+FM3+FM4_Test*.gif
Click on each xv window with the right mouse button
Double click matching file names in both windows and visually compare the two plots.
```

3.7.3 Solutions to Possible Problems

1. All output files are opened with Status = NEW in the CER3.2P1 software. These files must be removed before rerunning these test procedures. A script, which removes PGE created files, **clr_dir.PGE3.2**, is located in directory \$CERESHOME/erbelike/bin. Use the data date (4-digit year, 2-digit month) as a command-line argument:

\$CERESHOME/erbelike/bin/clr_dir.PGE3.2 200210

2. Refer to the Message and Log files created in \$CERESHOME/erbelike/data/runlogs for explanations of possible problems.

3.8 CER3.2P2 CERES ERBE-like Monthly Quality Control for Multiple Instruments (FM1+FM2)

3.8.1 Stand-alone Test Procedures

Before starting the processing of CER3.2P2, copy the test binary ES-9 input file and test ES-8 nadir files to the testing directory:

```
cp $CERESHOME/erbelike/data/input/CER_ES9_Terra-
    FM2_Edition1_021019.200210.met $CERESHOME/erbelike/data/out_comp/data/
        mtsa
cp $CERESHOME/erbelike/data/input/CER_ES8N_Terra-
    FM1_Test_000022.200210* $CERESHOME/erbelike/data/out_comp/data/inv
cp $CERESHOME/erbelike/data/input/CER_ES8N_Terra-
    FM2_Edition1_023019.200210* $CERESHOME/erbelike/data/out_comp/data/inv
```

3.8.1.1 PCF Generator

The production script, **CER3.2P2**, references a Process Control File (PCF) which contains the file names and paths for the test procedures. The PCF for the test case is created by executing a combined ASCII file and PCF generator, **gen_pcf.CER3.2P2**.

The PCF generator requires one command-line argument, yyyyymm (where yyyy is the 4-digit year, and mm is the 2-digit month).

1. Generate the ASCII input file and PCF for the test case:

```
cd $CERESHOME/erbelike/data/scr
source $CERESHOME/erbelike/bin/ENVerbelike-env2.csh
$CERESHOME/erbelike/bin/gen_pcf.CER3.2P2 200210
```

The following files will be generated in **\$CERESHOME/erbelike/pcf/** :

- **CER3.2P2_PCFin_FM1+FM2_Test_000032.200210**
- **CER3.2P2_PCF_FM1+FM2_Test_000032.200210**

2. Clean up the test directories:

```
$CERESHOME/erbelike/bin/clr_dir.PGE3.2P2 200210
```

3.8.1.2 Execution

Execute the production script by typing the script name, **CER3.2P2**, followed by a string which designates the instance of the PCF. The string should be formatted, 'Sampling Strategy' _ 'Production Strategy' _ 'Configuration Code' . 'Data Date'. The date parameter is formatted, yyyyymm, where yyyy is the 4-digit year and mm is the 2-digit month of the data.

For this test, use Sampling Strategy: FM1+FM2, Production Strategy: Test, Configuration Code: 000032 and Data Date: 200210

\$CERESHOME/erbelike/bin/CER3.2P2 FM1+FM2_Test_000032.200210

Product Generation Executive (PGE) CER3.2P2 will be executed and will create:

The following files will be generated in

\$CERESHOME/erbelike/Web/direct_cmp/data/ :

- DirectCompare_Day_FM1+FM2_Test.web
- DirectCompare_Ngt_FM1+FM2_Test.web
- DirectCompare_log_FM1+FM2_Test.200210
- NDC_FM1+FM2_Test_0d.gif
- NDC_FM1+FM2_Test_0n.gif
- NDC_FM1+FM2_Test_1d.gif
- NDC_FM1+FM2_Test_1n.gif
- NDC_FM1+FM2_Test_2d.gif
- NDC_FM1+FM2_Test_3d.gif
- NDC_FM1+FM2_Test_4d.gif
- NDC_FM1+FM2_Test_9d.gif
- NDC_FM1+FM2_Test_9n.gif

The following files will be generated in

\$CERESHOME/erbelike/Web/direct_cmp/data/NSC_200210/ :

- NSC_FM1+FM2_Test_all_0ufr.gif
- NSC_FM1+FM2_Test_all_1ufr.gif
- NSC_FM1+FM2_Test_all_2ufr.gif
- NSC_FM1+FM2_Test_all_3flx.gif
- NSC_FM1+FM2_Test_all_4flx.gif
- NSC_FM1+FM2_Test_clr_0ufr.gif
- NSC_FM1+FM2_Test_clr_1ufr.gif
- NSC_FM1+FM2_Test_clr_2ufr.gif
- NSC_FM1+FM2_Test_clr_3flx.gif
- NSC_FM1+FM2_Test_clr_4flx.gif
- NSC_FM1+FM2_Test_day_0ufr.gif
- NSC_FM1+FM2_Test_day_1ufr.gif
- NSC_FM1+FM2_Test_day_2ufr.gif
- NSC_FM1+FM2_Test_day_3flx.gif
- NSC_FM1+FM2_Test_day_4flx.gif

- NSC_FM1+FM2_Test_mcl_0ufr.gif
- NSC_FM1+FM2_Test_mcl_1ufr.gif
- NSC_FM1+FM2_Test_mcl_2ufr.gif
- NSC_FM1+FM2_Test_mcl_3flx.gif
- NSC_FM1+FM2_Test_mcl_4flx.gif
- NSC_FM1+FM2_Test_ngt_0ufr.gif
- NSC_FM1+FM2_Test_ngt_1ufr.gif
- NSC_FM1+FM2_Test_ngt_3flx.gif
- NSC_FM1+FM2_Test_pcl_0ufr.gif
- NSC_FM1+FM2_Test_pcl_1ufr.gif
- NSC_FM1+FM2_Test_pcl_2ufr.gif
- NSC_FM1+FM2_Test_pcl_3flx.gif
- NSC_FM1+FM2_Test_pcl_4flx.gif
- NSC_FM1+FM2_Test_sam_0ufr.gif
- NSC_FM1+FM2_Test_sam_1ufr.gif
- NSC_FM1+FM2_Test_sam_2ufr.gif
- NSC_FM1+FM2_Test_sam_3flx.gif
- NSC_FM1+FM2_Test_sam_4flx.gif
- ScatterCompare_log_FM1+FM2_Test.200210

The following files will be generated in

\$CERESHOME/erbelike/Web/direct_cmp/data/NSD_200210/ :

- DensityCompare_log_FM1+FM2_Test.200210
- NSD_FM1+FM2_Test_all_0ufr.gif
- NSD_FM1+FM2_Test_all_1ufr.gif
- NSD_FM1+FM2_Test_all_2ufr.gif
- NSD_FM1+FM2_Test_all_3flx.gif
- NSD_FM1+FM2_Test_all_4flx.gif
- NSD_FM1+FM2_Test_clr_0ufr.gif
- NSD_FM1+FM2_Test_clr_1ufr.gif
- NSD_FM1+FM2_Test_clr_2ufr.gif
- NSD_FM1+FM2_Test_clr_3flx.gif
- NSD_FM1+FM2_Test_clr_4flx.gif
- NSD_FM1+FM2_Test_day_0ufr.gif
- NSD_FM1+FM2_Test_day_1ufr.gif
- NSD_FM1+FM2_Test_day_2ufr.gif
- NSD_FM1+FM2_Test_day_3flx.gif
- NSD_FM1+FM2_Test_day_4flx.gif
- NSD_FM1+FM2_Test_mcl_0ufr.gif
- NSD_FM1+FM2_Test_mcl_1ufr.gif
- NSD_FM1+FM2_Test_mcl_2ufr.gif
- NSD_FM1+FM2_Test_mcl_3flx.gif
- NSD_FM1+FM2_Test_mcl_4flx.gif
- NSD_FM1+FM2_Test_ngt_0ufr.gif
- NSD_FM1+FM2_Test_ngt_1ufr.gif
- NSD_FM1+FM2_Test_ngt_3flx.gif

- NSD_FM1+FM2_Test_pcl_0ufr.gif
- NSD_FM1+FM2_Test_pcl_1ufr.gif
- NSD_FM1+FM2_Test_pcl_2ufr.gif
- NSD_FM1+FM2_Test_pcl_3flx.gif
- NSD_FM1+FM2_Test_pcl_4flx.gif
- NSD_FM1+FM2_Test_sam_0ufr.gif
- NSD_FM1+FM2_Test_sam_1ufr.gif
- NSD_FM1+FM2_Test_sam_2ufr.gif
- NSD_FM1+FM2_Test_sam_3flx.gif
- NSD_FM1+FM2_Test_sam_4flx.gif

The following files will be generated in

\$CERESHOME/erbelike/Web/threechannel/data/ :

- NTC_FM1+FM2_Test_0d.gif
- NTC_FM1+FM2_Test_0n.gif
- NTC_FM1+FM2_Test_0r.gif
- NTC_FM1+FM2_Test_1d.gif
- NTC_FM1+FM2_Test_1n.gif
- NTC_FM1+FM2_Test_1r.gif
- NTC_FM1+FM2_Test_2d.gif
- NTC_FM1+FM2_Test_9d.gif
- NTC_FM1+FM2_Test_9n.gif
- ThreeChannel_FM1_Test_dayTrend.web
- ThreeChannel_FM1_Test_ngdTrend.web
- ThreeChannel_FM1_Test_refTrend.web
- ThreeChannel_FM2_Test_dayTrend.web
- ThreeChannel_FM2_Test_ngdTrend.web
- ThreeChannel_FM2_Test_refTrend.web
- ThreeChannel_log_FM1+FM2_Test.200210

3.8.1.3 Exit Codes

All CER3.2P2 software terminates using the CERES defined EXIT CODES for the Langley TRMM Information System (LaTIS). Successful completion is indicated by an exit code of 0. This test should complete with “Exit Status = 0”.

3.8.1.4 CER3.2P2 Test Summary

Total Run Time:	8:40 minutes
Memory:	320 Megabytes
Required Disk Space:	35 Megabytes

3.8.2 Evaluation Procedures

When running the clear directory script, **clr_dir.PGE3.2P2**, the system message, “Cannot access <filename>: No such file or directory” may be written to the screen. This message occurs when the script tries to remove an old output file that does not exist. This does not signify a problem.

3.8.2.1 Log and Status File Results

The Error and Status Log Files are located in directory \$CERESHOME/erbelike/data/runlogs after CER3.2P2 has been executed. These files are:

- **CER3.2P2_LogReport_FM1+FM2_Test_000032.200210**
- **CER3.2P2_LogStatus_FM1+FM2_Test_000032.200210**
- **CER3.2P2_LogUser_FM1+FM2_Test_000032.200210**

3.8.2.2 Metadata Evaluation

No metadata files are produced while processing this PGE.

3.8.2.3 Output Data Evaluation

3.8.2.3.1 Direct Comparison Web File Evaluation

The direct comparison web files end in extension ‘.web’. Compare the web files for the test case with the web files provided in this delivery, using the diff command:

```
diff $CERESHOME/erbelike/Web/direct_cmp/data/  
DirectCompare_Day_FM1+FM2_Test.web $CERESHOME/erbelike/data/  
out_exp/data/Web/direct_cmp/data/DirectCompare_Day_FM1+FM2_Test.web  
  
diff $CERESHOME/erbelike/Web/direct_cmp/data/  
DirectCompare_Ngt_FM1+FM2_Test.web $CERESHOME/erbelike/data/out_exp/  
data/Web/direct_cmp/data/DirectCompare_Ngt_FM1+FM2_Test.web
```

3.8.2.3.2 Three Channel Inter-Comparison Web File Evaluation

The three channel inter-comparison web files end in extension ‘.web’. Compare the web files for the test case with the web files provided in this delivery, using the diff command:

```
diff $CERESHOME/erbelike/Web/threechannel/data/  
ThreeChannel_FM1_Test_dayTrend.web $CERESHOME/erbelike/data/out_exp/  
data/Web/threechannel/data/ThreeChannel_FM1_Test_dayTrend.web
```

```

diff $CERESHOME/erbelike/Web/threechannel/data/
ThreeChannel_FM1_Test_ngtTrend.web $CERESHOME/erbelike/data/out_exp/
data/Web/threechannel/data/ThreeChannel_FM1_Test_ngtTrend.web

diff $CERESHOME/erbelike/Web/threechannel/data/
ThreeChannel_FM1_Test_refTrend.web $CERESHOME/erbelike/data/out_exp/
data/Web/threechannel/data/ThreeChannel_FM1_Test_refTrend.web

diff $CERESHOME/erbelike/Web/threechannel/data/
ThreeChannel_FM2_Test_dayTrend.web $CERESHOME/erbelike/data/out_exp/
data/Web/threechannel/data/ThreeChannel_FM2_Test_dayTrend.web

diff $CERESHOME/erbelike/Web/threechannel/data/
ThreeChannel_FM2_Test_ngtTrend.web $CERESHOME/erbelike/data/out_exp/
data/Web/threechannel/data/ThreeChannel_FM2_Test_ngtTrend.web

diff $CERESHOME/erbelike/Web/threechannel/data/
ThreeChannel_FM2_Test_refTrend.web $CERESHOME/erbelike/data/out_exp/
data/Web/threechannel/data/ThreeChannel_FM2_Test_refTrend.web

```

3.8.2.3.3 Evaluation of Direct Comparison GIF Files

The resulting “gif” images (see [Section 3.8.1.2](#)) must be evaluated by an external viewer, i.e., xv. The CERES Test Coordinator may contact a member of the ERBE-like Subsystem Team to assist in the evaluation of these gif images.

```

cd $CERESHOME/erbelike/Web/direct_cmp/data/
xv NDC_FM1+FM2_Test_*.gif &
cd $CERESHOME/erbelike/data/out_exp/data/Web/direct_cmp/data/
xv NDC_FM1+FM2_Test_*.gif
Click on each xv window with the right mouse button
Double click matching file names in both windows and visually compare the two plots.

```

3.8.2.3.4 Evaluation of Three Channel Inter-comparison GIF Files

The resulting “gif” images (see [Section 3.8.1.2](#)) must be evaluated by an external viewer, i.e., xv. The CERES Test Coordinator may contact a member of the ERBE-like Subsystem Team to assist in the evaluation of these gif images.

```

cd $CERESHOME/erbelike/Web/threechannel/data/
xv NTC_FM1+FM2_Test_*.gif &
cd $CERESHOME/erbelike/data/out_exp/data/Web/threechannel/data/
xv NTC_FM1+FM2_Test_*.gif
Click on each xv window with the right mouse button
Double click matching file names in both windows and visually compare the two plots.

```

3.8.3 Solutions to Possible Problems

1. All output files are opened with Status = NEW in the CER3.2P2 software. These files must be removed before rerunning these test procedures. A script, which removes PGE created files, **clr_dir.PGE3.2P2**, is located in directory \$CERESHOME/erbelike/bin. Use the data date (4-digit year, 2-digit month) as a command-line argument:

\$CERESHOME/erbelike/bin/clr_dir.PGE3.2P2 200210

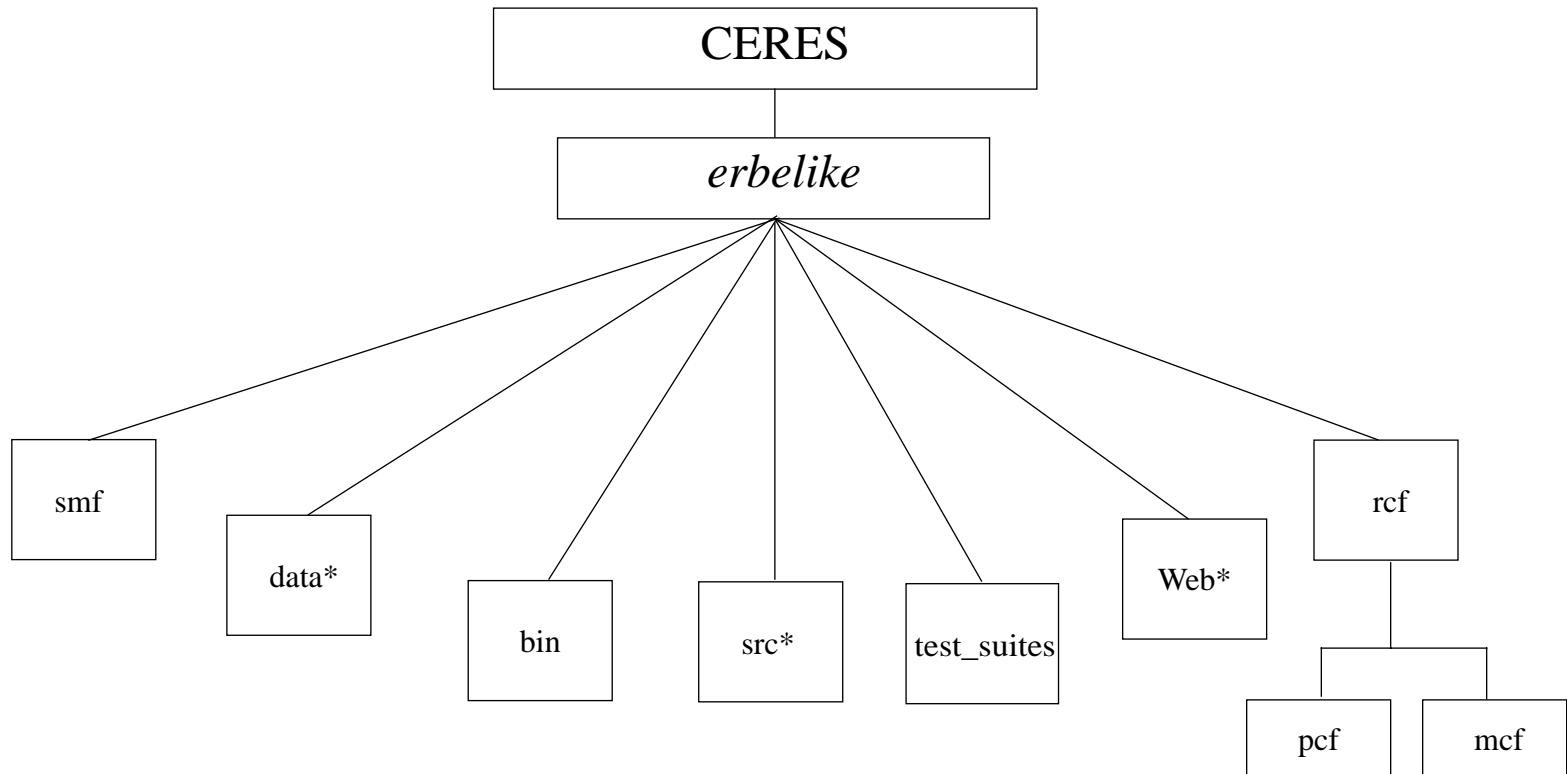
2. Refer to the Message and Log files created in \$CERESHOME/erbelike/data/runlogs for explanations of possible problems.

Appendix A Acronyms and Abbreviations

ASCII	American Standard Code Information Interchange
ASDC	Atmospheric Sciences Data Center
CERES	Clouds and the Earth's Radian Energy System
CERESlib	CERES library
DAAC	Distributed Active Archive Center
EOS	Earth Observing System
EOS-AM	EOS Morning Crossing (Ascending) Mission
EOS-PM	EOS Afternoon Crossing (Descending) Mission
ERBE	Earth Radiation Budget Experiment
ERBS	Earth Radiation Budget Satellite
FAPS	Fixed Azimuth Plane Scan
FAPS+RAPS	Indicates FAPS and RAPS data processed together
FAPS, RAPS	Indicates FAPS and RAPS data processed separately
FM	Flight Model
F90	Fortran 90
HDF	Hierarchical Data Format
LaTIS	Langley TRMM Information System
LW	Longwave
MB	Mega Byte
met	metadata file (or .met)
N/A	Not Applicable
NASA	National Aeronautics and Space Administration
NOAA	National Oceanic and Atmospheric Administration
PCF	Process Control File
PFM	Prototype Flight Model (on TRMM)
PGE	Product Generation Executives
QC	Quality Control
RAPS	Rotating Azimuth Plane Scan
SAIC	Science Applications International Corporation
SSF	Single Satellite CERES Footprint TOA and Surface Fluxes, Clouds
SW	Shortwave
Terra	EOS Morning Crossing (Ascending) Mission; also known as EOS-AM
TOA	Top of the Atmosphere, Top of Atmosphere
TRMM	Tropical Rainfall Measuring Mission

Appendix B Directory Structure Diagram

Directory Structure for the ERBE-like Tar File

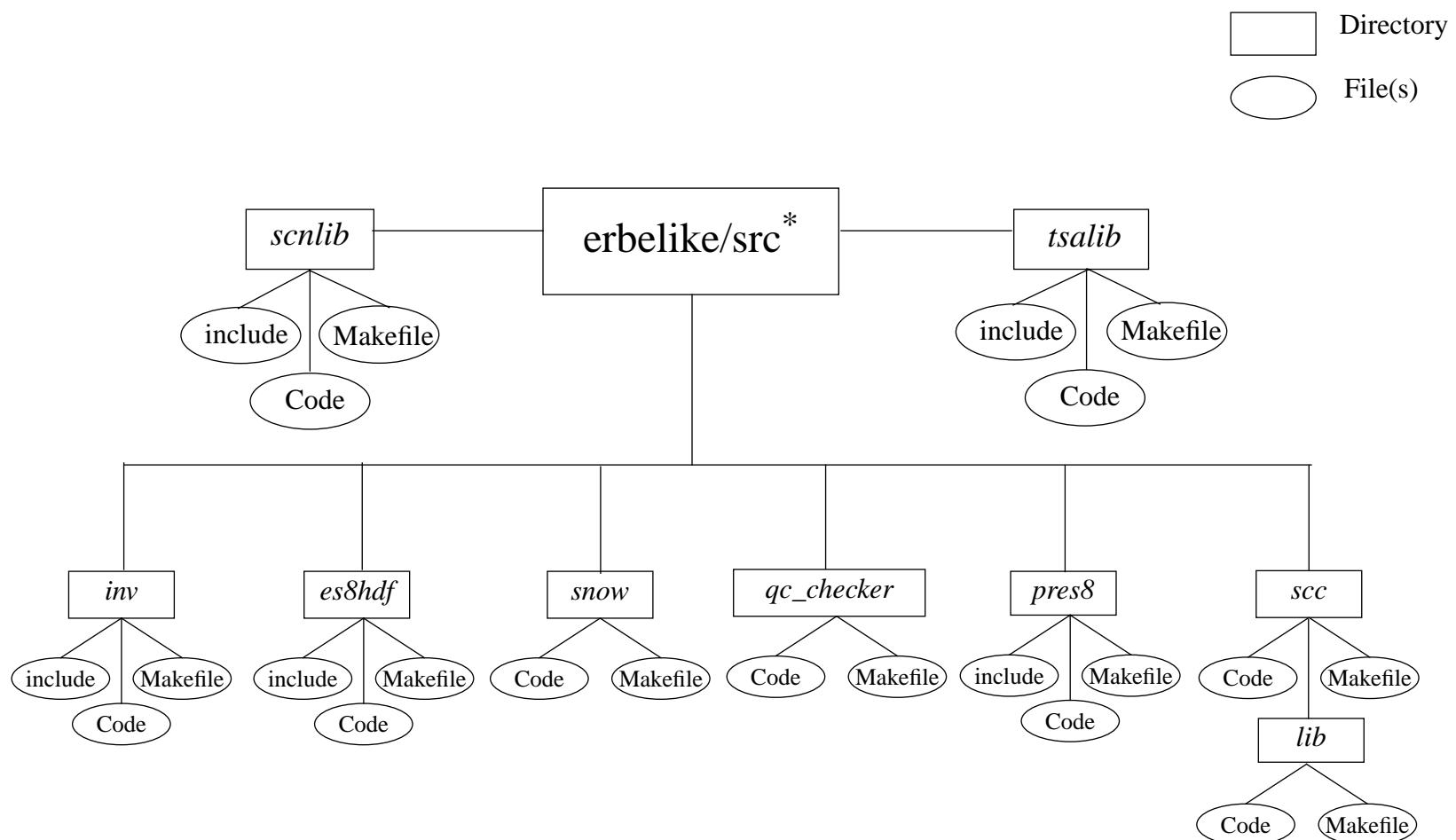


B-1

Italicized names are dependent on delivered software

*Breakdown of subdirectories shown on following pages

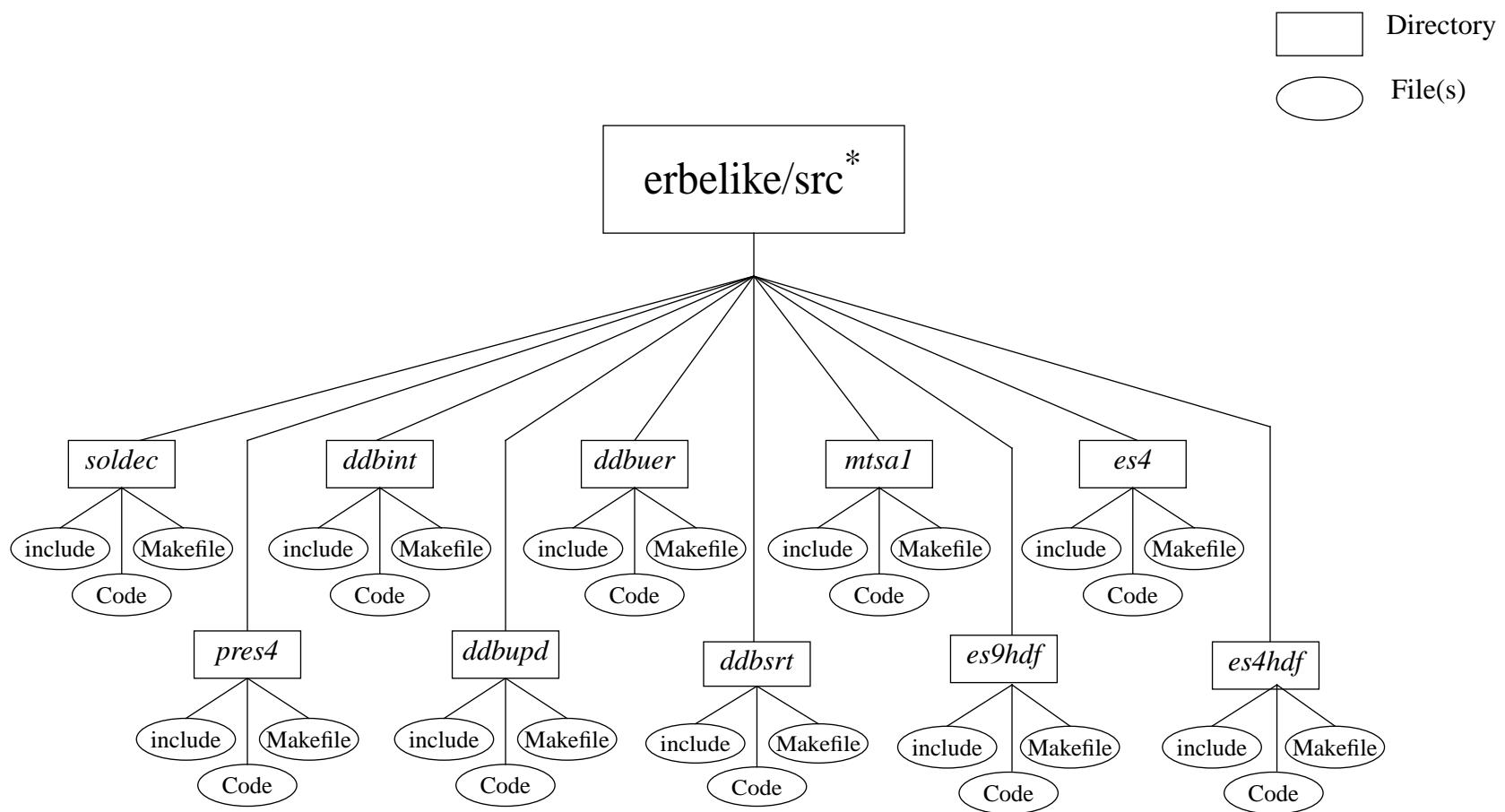
Figure B-1. Directory Structure for the ERBE-like Tar File (1 of 9)



*Breakdown of the src subdirectory; libraries and Subsystem 2 source code shown, Subsystem 3 source code on the following page.

Italicized names are dependent on delivered software

Figure B-1. Directory Structure for the ERBE-like Tar File (2 of 9)



*Breakdown of the src subdirectory for Subsystem 3
shown (see previous page for libraries and Sub-
system 2 files).

Italicized names are dependent on delivered
software

Figure B-1. Directory Structure for the ERBE-like Tar File (3 of 9)

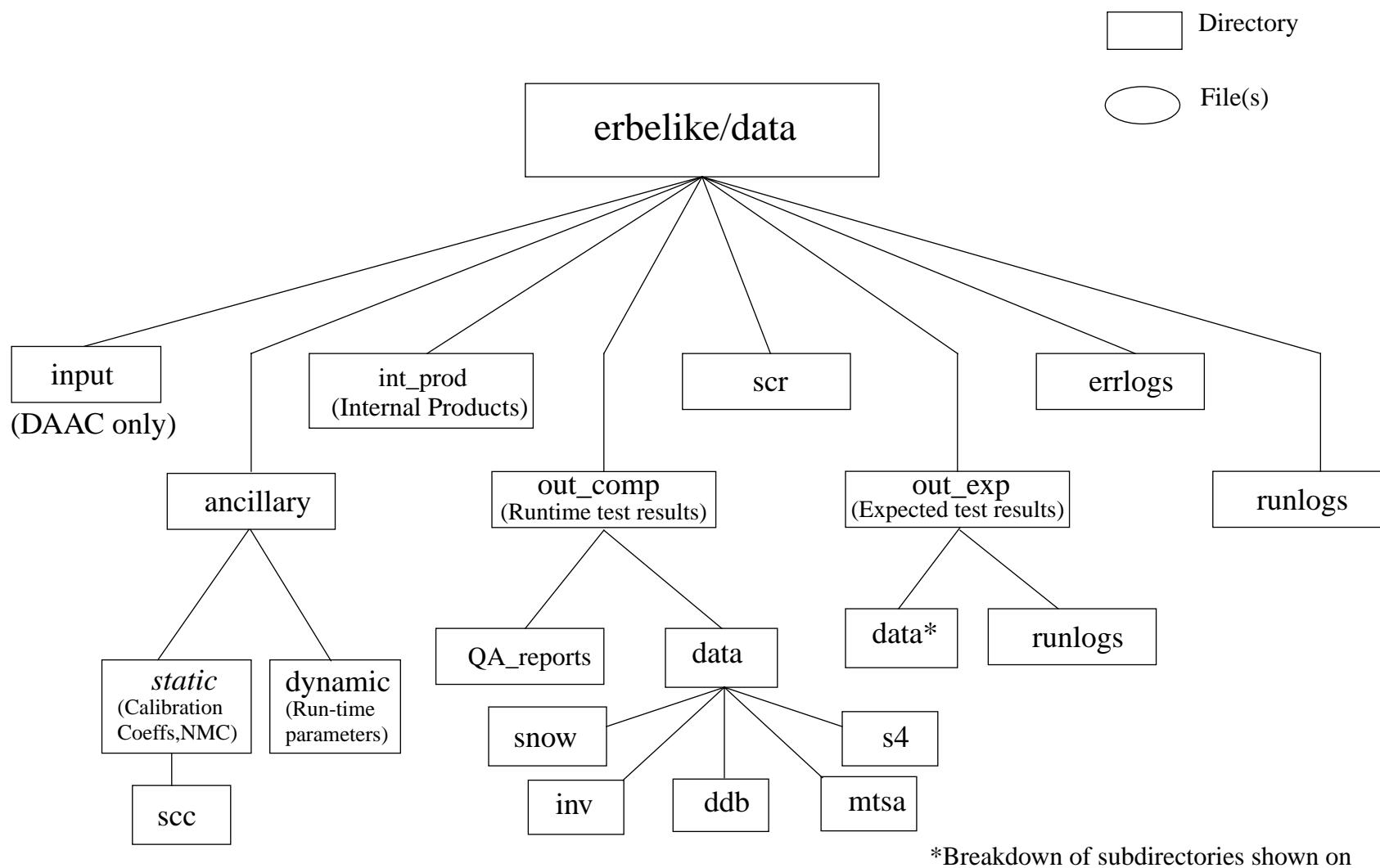


Figure B-1. Directory Structure for the ERBE-like Tar File (4 of 9)

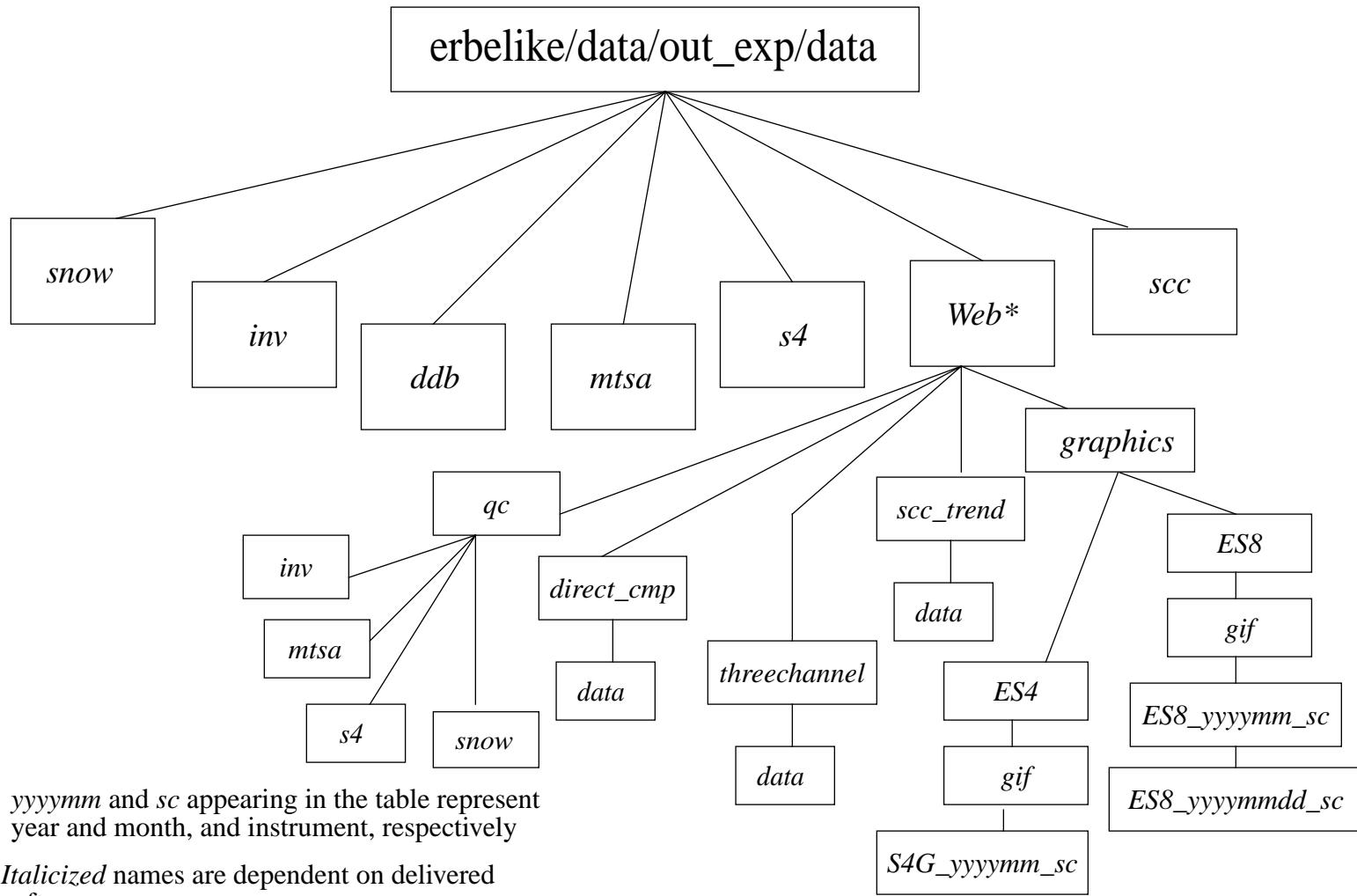
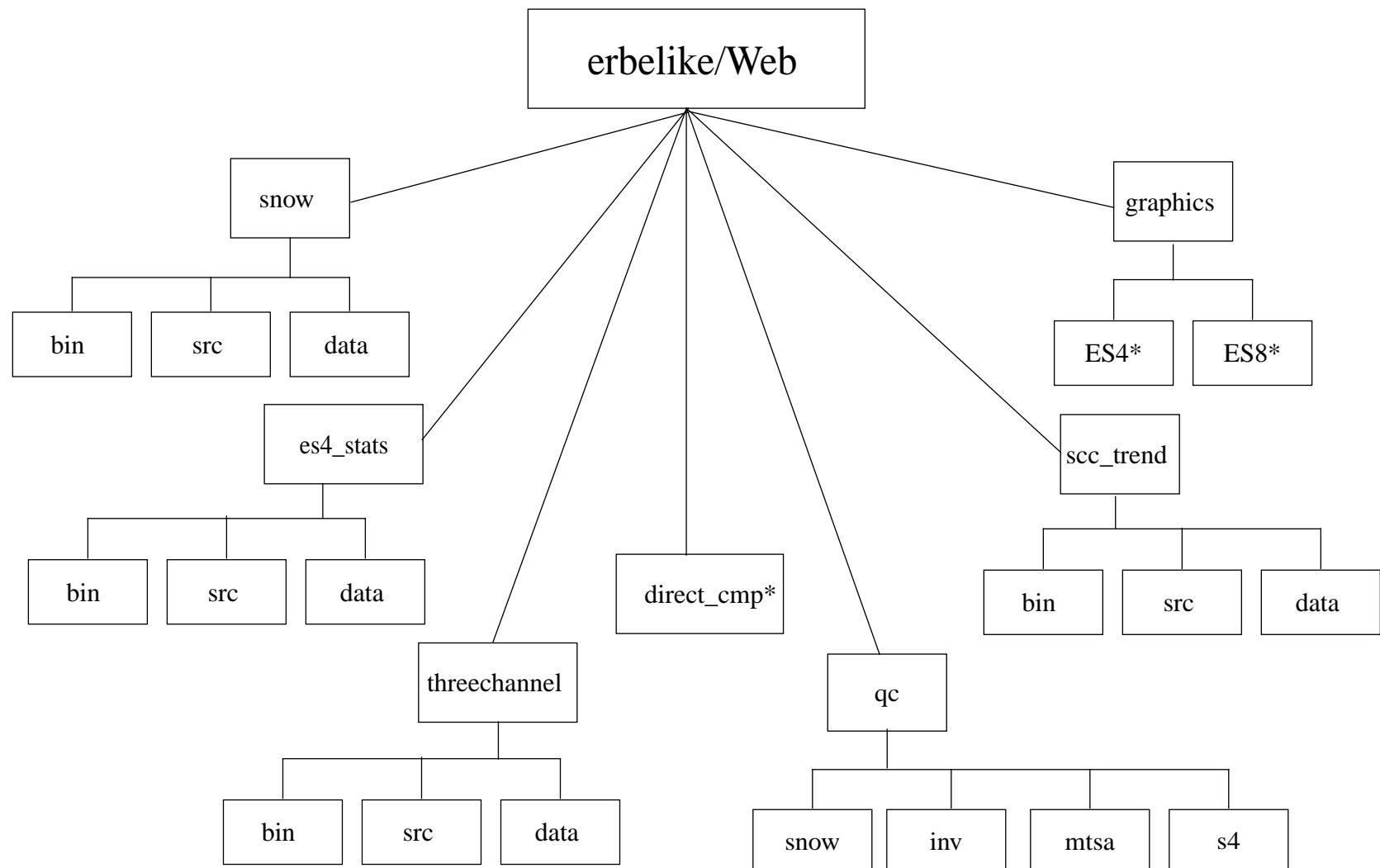


Figure B-1. Directory Structure for the ERBE-like Tar File (5 of 9)

B-6



*Breakdown of subdirectories shown on following pages

Figure B-1. Directory Structure for the ERBE-like Tar File (6 of 9)

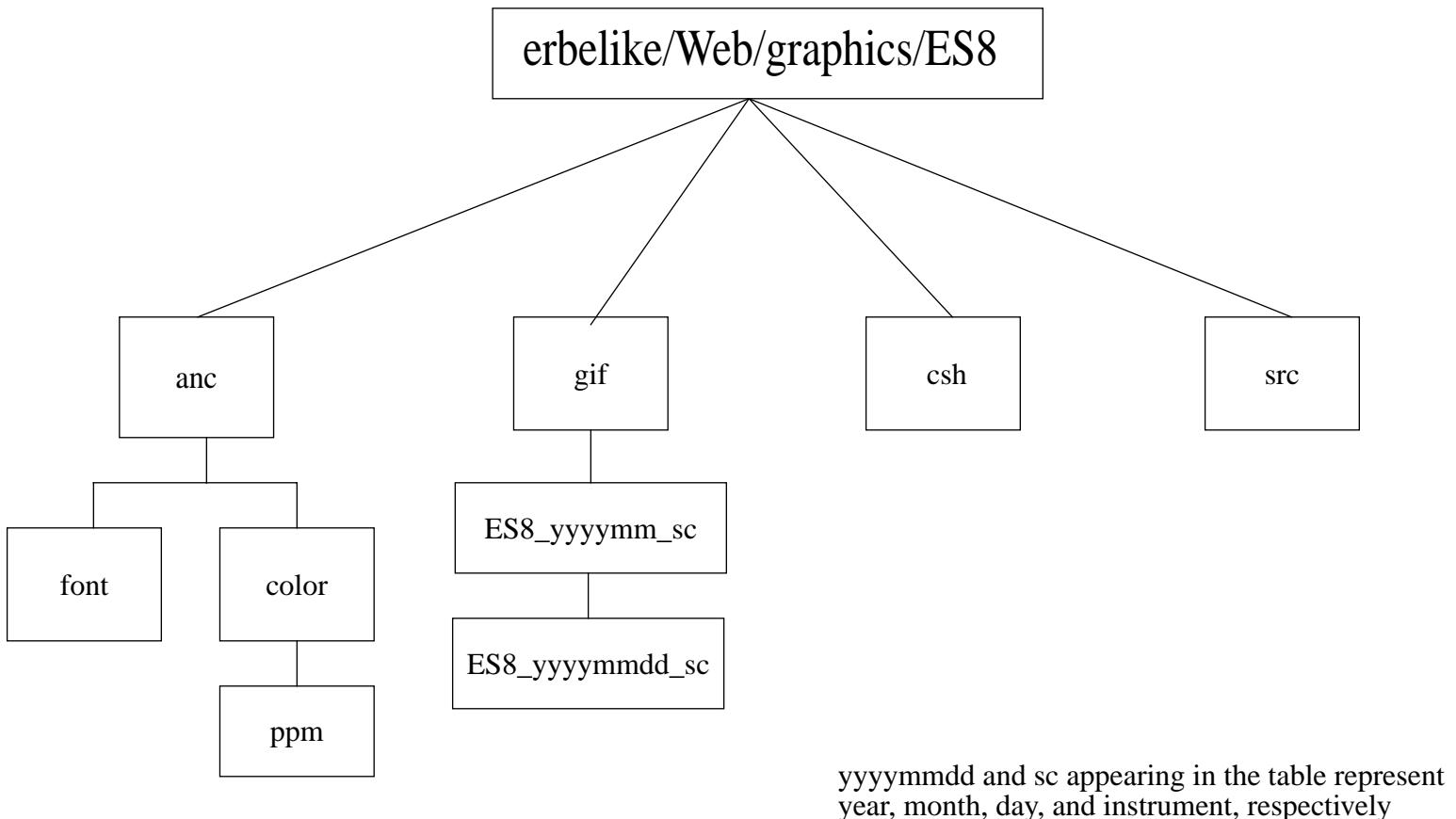
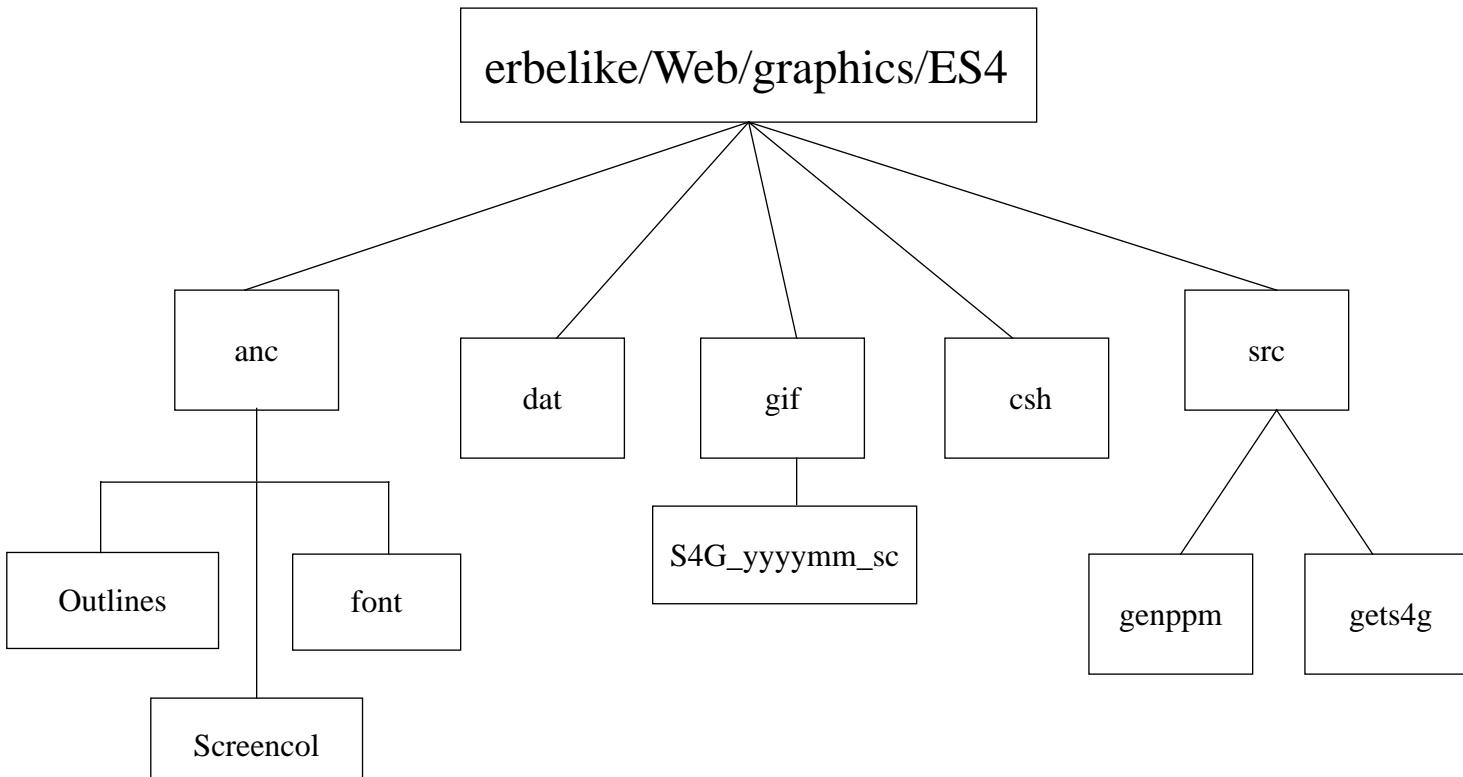
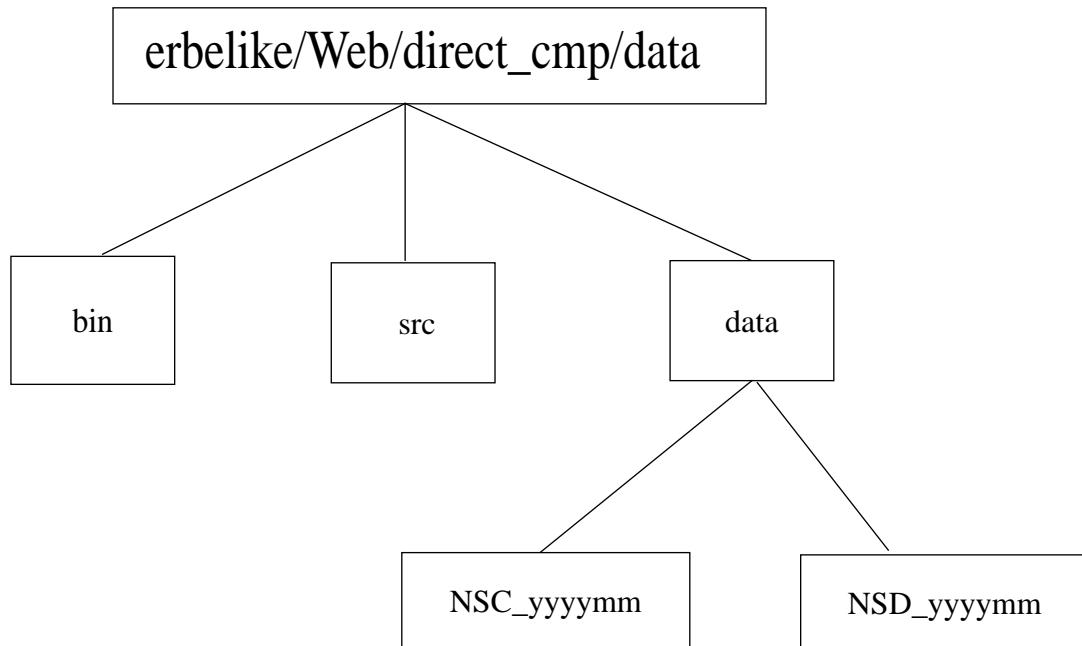


Figure B-1. Directory Structure for the ERBE-like Tar File (7 of 9)



yyyyymm and sc appearing in the table represent year and month, and instrument, respectively

Figure B-1. Directory Structure for the ERBE-like Tar File (8 of 9)



yyyymm appearing in the table represent year and month, respectively

Figure B-1. Directory Structure for the ERBE-like Tar File (9 of 9)

Appendix C

File Description Tables

C.1 Production Scripts

The following scripts must be moved to the production environment.

Table C.1-1. Production Scripts (\$CERESHOME/erbelike/bin) (1 of 3)

File Name	Format	Description
README	ASCII	Contains a description of the files in this directory.
CER2.1P1	ASCII	C-shell script to run ERBE-like Subsystem 2.1P1
CER2.2P1	ASCII	C-shell script invokes ERBE-like inversion program to process a day's combined FAPS and RAPS data from a single instrument.
CER2.3P1	ASCII	C-shell script invokes ERBE-like inversion program, daily data base initialization, and daily data update programs to process the daily combined FAPS and RAPS data from a single instrument for the 1st day of a month. This script generates an overlap data file for the previous month's monthly processing.
CER2.3P2	ASCII	C-shell script invokes ERBE-like inversion program, daily data base initialization, and daily data update programs to process the daily combined FAPS and RAPS data from a single instrument for the last day of a month. This script generates an overlap data file for the next month's monthly processing.
CER2.4P1	ASCII	C-shell script invokes ERBE-like spectral response function and spectral correction coefficient program.
CER3.1P1	ASCII	C-shell script invokes ERBE-like Daily Data Base (ddbint, ddupd, ddbuer, and ddbsrt), Monthly Time/Space Averaging (mtsa1), and Monthly Regional, Zonal, and Global Averages (es4) for single instrument monthly data processing.
CER3.2P1	ASCII	C-shell script invokes ERBE-like Daily Data Base (ddbint, ddupd, ddbuer, and ddbsrt), Monthly Time/Space Averaging (mtsa3), and Monthly Regional, Zonal, and Global Averages (es4) for multiple instrument monthly data processing.
CER3.2P2	ASCII	C-shell script invokes ERBE-like ES-8 nadir file Direct Comparison and Three Channel Inter-Comparison software for two instrument on spacecraft.
ENVerbelike-env.csh	ASCII	C-shell script sets environment variables for ERBE-like PCF input file generators, PCF generators, and PGEs.
ENVerbelike-env2.csh	ASCII	C-shell script sets environment variables for ERBE-like PCF input file generators, PCF generators, and PGEs.

Table C.1-1. Production Scripts (\$CERESHOME/erbelike/bin) (2 of 3)

File Name	Format	Description
ENVerbelike-env4.csh	ASCII	C-shell script sets environment variables for ERBE-like PCF input file generators, PCF generators, and PGEs.
Fail2.1p1_template	ASCII	ASCII file used as template for mail feature in SS2.1P1
QCchecker.csh	ASCII	C-shell script invokes ERBE-like Quality Control file checker processing.
Succ2.1p1_template	ASCII	ASCII file used as template for mail feature in SS2.1P1
Succ2.1p1_template2	ASCII	ASCII file used as template for mail feature in SS2.1P1
clr_dir.PGE2	ASCII	C-shell script to clear output data files and directories before executing CER2.2P1
clr_dir.PGE2.1	ASCII	C-shell script to clear output data files and directories before executing CER2.1P1
clr_dir.PGE2.3	ASCII	C-shell script to clear output data files and directories before executing CER2.3P1 and CER2.3P2
clr_dir.PGE2.4	ASCII	C-shell script to clear output data files and directories before executing CER2.4P1
clr_dir.PGE3	ASCII	C-shell script to clear output data files and directories before executing CER3.2P1
clr_dir.PGE3.2	ASCII	C-shell script to clear output data files and directories before executing CER3.2P1
clr_dir.PGE3.2P2	ASCII	C-shell script to clear output data files and directories before executing CER3.2P2
compile_all	ASCII	C-shell script to compile all ERBE-like programs
compile_ss2	ASCII	C-shell script to compile all Subsystem 2 programs
compile_ss3	ASCII	C-shell script to compile all Subsystem 3 programs
gen_pcf.CER2.1P1	ASCII	C-shell script creating an ASCII file and PCF for PGE2.1P1
gen_pcf.CER2.2	ASCII	C-shell script creating an ASCII file and PCF for PGE2.2P1
gen_pcf.CER2.3P1	ASCII	C-shell script creating an ASCII file and PCF for CER2.3P1
gen_pcf.CER2.3P2	ASCII	C-shell script creating an ASCII file and PCF for CER2.3P2
gen_pcf.CER2.4P1	ASCII	C-shell script creating an ASCII file and PCF for CER2.4P1
gen_pcf.CER3.1	ASCII	C-shell script creating an ASCII file and PCF for PGE3.1P1
gen_pcf.CER3.2	ASCII	C-shell script creating an ASCII file and PCF for CER3.2P1
gen_pcf.CER3.2P2	ASCII	C-shell script creating an ASCII file and PCF for CER3.2P2
plot_es4	ASCII	C-shell script invokes es4Allgif to generate monthly ES4 plots for Web pages

Table C.1-1. Production Scripts (\$CERESHOME/erbelike/bin) (3 of 3)

File Name	Format	Description
plot_es8	ASCII	C-shell script invokes es8Gif to generate daily ES8 plots for Web page
plot_qc	ASCII	C-shell script invokes combine_qc.pl to generate Inversion monthly QC report file for Web page
regen_pict.ss2.1p1	ASCII	C-shell script to regenerate the PostScript and gif files using existing SNOW files
scc_calc_dates.csh	ASCII	C-shell script to calculate the interpolation interval based on the input file dates and the interval between the first input date and the run date
scc_calc_files.csh	ASCII	C-shell script to determine the spectral response functions and correction coefficient input file names
scc_daymasterfile.csh	ASCII	C-shell script to combine regression files to generate the spectral correction coefficient day file
scc_gen.csh	ASCII	C-shell script to produce all intermediate coefficient and regression files
scc_nightmasterfile.csh	ASCII	C-shell script to combine regression files to generate the spectral correction coefficient night file
../Web/snow/bin/ MonthlyIIGS_Plot.idl	ASCII	Text file used by IDL to run the monthly IIGS plots for the Web pages

C.2 Executables

Table C.2-1. Executables (\$CERESHOME/erbelike/bin) (1 of 2)

File Name	Format	Description
convert	Binary	Freeware executable converting Postscript images to gif images for CER2.1P1
ddbint.exe	Binary	ERBE-like Daily Data Base Initialization program.
ddbsrt.exe	Binary	ERBE-like Daily Data Base Monthly Data Sort program.
ddbuer.exe	Binary	ERBE-like Daily Data Base Overlap Data Update program.
ddbupd.exe	Binary	ERBE-like Daily Data Base Update program.
es4.exe	Binary	ERBE-like Monthly Regional, Zonal, and Global Averages program.
gen_es4hdf.exe	Binary	ERBE-like conversion of ES4G1-4 to ES4 HDF-EOS program.
gen_es8hdf.exe	Binary	ERBE-like conversion of ES8 to ES8 HDF-EOS program.
gen_es9hdf.exe	Binary	ERBE-like conversion of ES9 to ES9 HDF program.
gen_snow.exe	Binary	ERBE-like program generating a monthly snow map file.
giftrans	Binary	Freeware executable converting normal gif file to transparent gif file.
inv.exe	Binary	ERBE-like inversion program
mtsa0.exe	Binary	ERBE-like Single-Instrument Monthly Time/Space Averaging program.
mtsa1.exe	Binary	ERBE-like Multi-Instrument Monthly Time/Space Averaging program.
mtsa3.exe	Binary	ERBE-like Multi-Instrument Monthly Time/Space Averaging program.
ppmtogif	Binary	Freeware executable converting ppm file to gif file
pre_es4.exe	Binary	ERBE-like program generating monthly regional, zonal, and global averages housekeeping.
pre_es8.exe	Binary	ERBE-like program generating a CERES PRES8 from an ERBE S8 data file.
read_qc.exe	Binary	ERBE-like Quality Control file checker program.
scc_calbkn.exe	Binary	Reads in filtered and unfiltered results from spcoef for clear and ovc land/ocean cases only, and determines filtered and unfiltered values for broken cases. Also, reads in filtered and unfiltered values for deep convective clouds

Table C.2-1. Executables (\$CERESHOME/erbelike/bin) (2 of 2)

File Name	Format	Description
scc_interp_resp.exe	Binary	Derives the response function using linear fit of two given response functions.
scc_regr.exe	Binary	Reads simulated filtered and unfiltered radiances based on modtran calculations and fits a line to ncas pairs.
scc_regr_lw.exe	Binary	Reads simulated filtered and unfiltered radiances based on modtran calculations and fits a line to ncas pairs.
scc_spcoef.exe	Binary	Uses spectral radiances from modtran runs and spectral responses.
scc_spcoef_Ind.exe	Binary	Uses SW radiances from modtran runs and spectral response to determine unfiltering coefficients
scc_spcoef_night.exe	Binary	Generates nighttime total and window radiances.
scc_spcoef_night_Ind.exe	Binary	Generates nighttime total and window radiances.
scc_stitch.exe	Binary	Reads in ocean clr and old cloud modtran tape 7 results and stitches an output file together that has one clear followed by four cloud cases.
sol_dec.exe	Binary	ERBE-like program generating monthly solar declination file.

Note: These files will be generated on execution of Subsystem software and are not included in the tar file.

C.3 Status Message Files

Table C.3-1. Status Message Files (\$CERESHOME/erbelike/smf)

File Name	Format	Description
albedo_mod_25201.t	ASCII	Message file for module makealbmaps_all.f90
combine_mod_25202.t	ASCII	Message file for module makecombine_file.f90
ddb_25203.t	ASCII	Message file for Daily Data Base modules
erbe_mod_25204.t	ASCII	Message file for module ERBE_Mod.f90
erbeqc_25205.t	ASCII	Message file for module qc_reader.f90
es4_25206.t	ASCII	Message file for es4 modules
esx hdf_25207.t	ASCII	Message file for es4, es8 and es9 hdf modules
inv_25208.t	ASCII	Message file for program inv.f90
invsurf_25221.t	ASCII	Message file for module es8_at_surf.f90
mtsa_25209.t	ASCII	Message file for Monthly Time/Space Averaging modules
nadir_25219.t	ASCII	Message file for module nadir_util.f90
postproc_mod_25210.t	ASCII	Message file for module PostProc.f90
pres4_25211.t	ASCII	Message file for module pre_es4.f90
pres8_25220.t	ASCII	Message file for program gen_pres8.f90
s4stats_25223.t	ASCII	Message file for es4_stats programs
scc_25222.t	ASCII	Message file for scc programs
scnlib_25212.t	ASCII	Message file for scnlib modules
snow_main_25214.t	ASCII	Message file for module Snow_Main.f90
snow_mod_25215.t	ASCII	Message file for module Snow_Mod.f90
soldec_25216.t	ASCII	Message file for sol_dec.f90
thres_mod_25217.t	ASCII	Message file for module makeallthresholds.f90
tsalib_25218.t	ASCII	Message file for tsalib modules

C.4 Processing Control Files (PCF) and Metadata Control Files (MCF)

The Process Control Files are not included in the Software Delivery Package. They will be created by the PCF generator scripts.

Table C.4-1. Metadata Control Files (\$CERESHOME/erbelike/rcf/mcf) (1 of 2)

File Name	Format	Description
CCES8HAB.mcf	ODL	Metadata control file template
CCES8_AB.mcf	ODL	Metadata control file template
CCID6AB.mcf	ODL	Metadata control file template
CCID6FAB.mcf	ODL	Metadata control file template
CCID6RAB.mcf	ODL	Metadata control file template
CCMSGAB.mcf	ODL	Metadata control file template
CCMSGFAB.mcf	ODL	Metadata control file template
CCMSGRAB.mcf	ODL	Metadata control file template
CCQCDAB.mcf	ODL	Metadata control file template
CCQCDFAB.mcf	ODL	Metadata control file template
CCQCIAB.mcf	ODL	Metadata control file template
CCQCIFAB.mcf	ODL	Metadata control file template
CCQCIRAB.mcf	ODL	Metadata control file template
CCQCR_AA.mcf	ODL	Metadata control file template
CCSNOWAA.mcf	ODL	Metadata control file template
CCXDRAB.mcf	ODL	Metadata control file template
CCXDRFAB.mcf	ODL	Metadata control file template
CD4G1AB.mcf	ODL	Metadata control file template
CD4G1FAB.mcf	ODL	Metadata control file template
CD4G2AB.mcf	ODL	Metadata control file template
CD4G2FAB.mcf	ODL	Metadata control file template
CD4G3AB.mcf	ODL	Metadata control file template
CD4G3FAB.mcf	ODL	Metadata control file template
CD4G4AB.mcf	ODL	Metadata control file template
CD4G4FAB.mcf	ODL	Metadata control file template
CDES4AB.mcf	ODL	Metadata control file template

Table C.4-1. Metadata Control Files (\$CERESHOME/erbelike/rcf/mcf) (2 of 2)

File Name	Format	Description
CDES4FAB.mcf	ODL	Metadata control file template
CDES9AB.mcf	ODL	Metadata control file template
CDES9FAB.mcf	ODL	Metadata control file template
CDMSGAB.mcf	ODL	Metadata control file template
CDMSGFAB.mcf	ODL	Metadata control file template
CDQCAAB.mcf	ODL	Metadata control file template
CDQCAFAB.mcf	ODL	Metadata control file template
CDQCBAB.mcf	ODL	Metadata control file template
CDQCBFAB.mcf	ODL	Metadata control file template
CDQCCAB.mcf	ODL	Metadata control file template
CDQCCFAB.mcf	ODL	Metadata control file template
CDQCDAB.mcf	ODL	Metadata control file template
CDQCDFAB.mcf	ODL	Metadata control file template
CDQCGAB.mcf	ODL	Metadata control file template
CDQCGFAB.mcf	ODL	Metadata control file template
CDQCSAB.mcf	ODL	Metadata control file template
CDQCSFAB.mcf	ODL	Metadata control file template
CDQCXAB.mcf	ODL	Metadata control file template
CDQCXFAB.mcf	ODL	Metadata control file template
CDS4HAB.mcf	ODL	Metadata control file template
CDS4HFAB.mcf	ODL	Metadata control file template
CDS9HAB.mcf	ODL	Metadata control file template
CDS9HFAB.mcf	ODL	Metadata control file template
CDXDRAB.mcf	ODL	Metadata control file template
CSCCD_AB.mcf	ODL	Metadata control file template
CSCCN_AB.mcf	ODL	Metadata control file template

Table C.4-2. Process Control Files (\$CERESHOME/erbelike/rcf/pcf)

File Name	Format	Description
CER2.1P1_PCFin_Terra-FM1_Test_000021.200210 ¹	ASCII	ASCII input file for CER2.1P1
CER2.1P1_PCF_Terra-FM1_Test_000021.200210 ¹	ASCII	Process control file for CER2.1P1
CER2.2P1_PCFin_Terra-FM1_Test_000022.20021021 ¹	ASCII	ASCII input file for CER2.2P1
CER2.2P1_PCF_Terra-FM1_Test_000022.20021021 ¹	ASCII	Process control file for CER2.2P1
CER2.3P1_PCFin_Terra-FM1_Test_000023.20021101 ¹	ASCII	ASCII input file for CER2.3P1
CER2.3P1_PCF_Terra-FM1_Test_000023.20021101 ¹	ASCII	Process control file for CER2.3P1
CER2.3P2_PCFin_Terra-FM1_Test_000023.20020930 ¹	ASCII	ASCII input file for CER2.3P2
CER2.3P2_PCF_Terra-FM1_Test_000023.20020930 ¹	ASCII	Process control file for CER2.3P2
CER2.4P1_PCFin_Terra-FM1_Test_000024.20021015 ¹	ASCII	ASCII input file for CER2.4P1
CER2.4P1_PCF_Terra-FM1_Test_000024.20021015 ¹	ASCII	Process control file for CER2.4P1
CER3.1P1_PCFin_Terra-FM1_Test_000031.200210 ¹	ASCII	ASCII input file for CER3.1P1
CER3.1P1_PCFin_Terra-FM1_Test_000031.200210 ¹	ASCII	Process control file for CER3.1P1
CER3.2P1_PCFin_FM1+FM2+FM3+FM4_Test_000032.200210 ¹	ASCII	ASCII input file for CER3.2P1
CER3.2P1_PCF_FM1+FM2+FM3+FM4_Test_000032.200210 ¹	ASCII	Process control file for CER3.2P1
CER3.2P2_PCFin_FM1+FM2_Test_000032.200210 ¹	ASCII	ASCII input file for CER3.2P2
CER3.2P2_PCF_FM1+FM2_Test_000032.200210 ¹	ASCII	Process control file for CER3.2P2

1. These files will be generated on execution of Subsystem software and are not included in the tar file.

C.5 HDF Read Software

Table C.5-1. ERBE-like Read Software Files (\$CERESHOME/erbelike/src)

File Name	Format	Description
es8hdf/readHDF/README_read	ASCII	Contains a description of the files for the ES-8 HDF-EOS read program.
es8hdf/readHDF/HDFread.h	ASCII	Header file for the ES-8 HDF-EOS read program.
es8hdf/readHDF/readHDFfuncs.c	ASCII	Calls HDF functions for the ES-8 HDF-EOS read program.
es8hdf/readHDF/test_rdES8.c	ASCII	Reads an SDS and Vdata from an ES-8 HDF-EOS file.
es8hdf/readHDF/compile_rdES8	ASCII	Compiler for the ES-8 HDF-EOS read program.
es9hdf/readHDF/README_read	ASCII	Contains a description of the files for the ES-9 HDF read program.
es9hdf/readHDF/HDFread.h	ASCII	Header file for the ES-9 HDF read program.
es9hdf/readHDF/readHDFfuncs.c	ASCII	Calls HDF functions for the ES-9 HDF read program.
es9hdf/readHDF/test_rdES9.c	ASCII	Reads an SDS and Vdata from an ES-9 HDF file.
es9hdf/readHDF/compile_rdES9	ASCII	Compiler for the ES-9 HDF read program.
es4hdf/readHDF/README_read	ASCII	Contains a description of the files for the ES-4 HDF-EOS read program.
es4hdf/readHDF/HDFread.h	ASCII	Header file for the ES-4 HDF-EOS read program.
es4hdf/readHDF/readHDFfuncs.c	ASCII	Calls HDF functions for the ES-4 HDF-EOS read program.
es4hdf/readHDF/test_rdES4.c	ASCII	Reads an SDS and Vdata from an ES-4 HDF-EOS file.
es4hdf/readHDF/compile_rdES4	ASCII	Compiler for the ES-4 HDF-EOS read program.

C.6 Ancillary Input Data

Table C.6-1. Ancillary Input Data
(\$CERESHOME/erbelike/data/ancillary/static) (1 of 2)

File Name	Format	Description
README	ASCII	Contains a description of the files in this directory.
BIILWss.yyyymmdd	Binary	Four ERBE binary seasonally varying scene identification algorithm parameter files for the Inversion program using old ADMs.
BIISW02.yyyymmdd	Binary	ERBE binary temporally invariant scene identification algorithm parameter file for the inversion program using old ADMs.
CHAN_LW.199703	ASCII	AVIS NOAA9 Offsets.
CHAN_SW.199703	ASCII	AVIS NOAA9 Offsets.
CHAN_TOT.199703	ASCII	AVIS NOAA9 Offsets.
ISDM2.yyyymmdd	Binary	ERBE binary direction model file for MTSA programs.
NIISCE01.yyyymmdd	Binary	Binary parameter file for the Inversion program using new ADMs.
NIISCE02.yyyymmdd	Binary	Binary parameter file for the Inversion program using new ADMs.
NIISCN09.yyyymmdd	Binary	Binary parameter file for the Inversion program using new ADMs.
NIISCOLD.yyyymmdd	Binary	Binary parameter file for the Inversion program using old ADMs.
NIISW03.970213	Binary	ERBE binary temporally invariant scene identification algorithm parameter file for the inversion program using new ADMs.
NIPSC.yyyymmdd	ASCII	One namelist file for Inversion Subsystem for CERES data processing using new ADMs and new LW thresholds.
NIPSCE.20001020	ASCII	Namelist file for Inversion Subsystem for ERBE data processing.
NIPSCE.20010502	ASCII	Namelist file for Inversion Subsystem for ERBE data processing.
OFFSETs_N09.20010531	ASCII	Green's NOAA9 Offsets.
QCcheck.list	ASCII	List of parameters and instructions for QC evaluation software.
SNOW_COMPOSITE_MM.yyyymmdd	Binary	Twelve binary monthly varying scene identification algorithm parameter files for the Inversion program.
baseline.map.19971101	ASCII	ERBE GeoScene Types of static Ocean, Land, Desert and Coast.

**Table C.6-1. Ancillary Input Data
(\$CERESHOME/erbelike/data/ancillary/static) (2 of 2)**

File Name	Format	Description
ceres_SI_inst_day.yyyymmdd	ASCII	Daytime Slope Intercept Spectral Correction Coefficients.
ceres_SI_inst_night.yyyymmdd	ASCII	Nighttime Slope Intercept Spectral Correction Coefficients.
combaut.19980130	Binary	ERBE binary seasonally varying albedo thresholds.
combspr.19980130	Binary	ERBE binary seasonally varying albedo thresholds.
combsum.19980130	Binary	ERBE binary seasonally varying albedo thresholds.
combwin.19980130	Binary	ERBE binary seasonally varying albedo thresholds.
erbe_SI_FM1_day_PREBURN.20010524	ASCII	Daytime Slope Intercept Spectral Correction Coefficients for ERBE scanner data.
erbe_SI_FM1_night_PREBURN.20010524	ASCII	Nighttime Slope Intercept Spectral Correction Coefficients for ERBE scanner data.
erbe_SI_inst_day_YYYYMM.yyyymmdd	ASCII	Daytime Slope Intercept Spectral Correction Coefficients for ERBE scanner data.
erbe_SI_inst_night_YYYYMM.yyyymmdd	ASCII	Nighttime Slope Intercept Spectral Correction Coefficients for ERBE scanner data.
indx_EASE_dat.19971101	Binary	EASE indexes for grid transformation from Polar Stereographic grid data to Equal Angle grid.
map_inst_fullscan.yyyymmdd	ASCII	LW Tolerances file.
psnow.map.19971231	Binary	ERBE GeoScene Type of Permanent Snow regions.
scc/dc_szXX.spectra.tp7	ASCII	Spectral radiances for deep convective clouds.
scc/dc_vz.spectra.tp7	ASCII	Spectral WN radiances for deep convective clouds.
scc/lnd_szXXL.tp7	ASCII	Spectral radiances for land scenes
scc/lnd_vz.tp7	ASCII	Spectral WN radiances for land scenes.
scc/oceclz_szXXL.tp7	ASCII	Spectral radiances for ocean cloud scenes.
scc/oceclz_vz.tp7	ASCII	Spectral WN radiances for ocean cloud scenes.
scc/oceclr_szXXL.tp7	ASCII	Spectral radiances for ocean clear scenes.
scc/oceclr_vz.tp7	ASCII	Spectral WN radiances for ocean clear scenes.
scc/sno_szXXL.tp7	ASCII	Spectral radiances for snow scenes.
scc/sno_vz.tp7	ASCII	Spectral WN radiances for snow scenes.

Note: All references in this table to dd = creation day, DD = data day, mm = creation month, MM = data month, ss = season, inst = instrument ID, yyyy = creation year, YYYY = data year and XX = (00, 41, 60, 75, and 85).

C.7 Output Temporary Data Files (Production Results)

Table C.7-1. Output Temporary Data Files (\$CERESHOME/erbelike/data/scr)

File Name	Format	Description
CER2.2_Terra-FM1_Test_000000.\$date/ TempSNOW.ps	PostScript	IDL Postscript file used to create GIF image in CER2.1P1.
CER2.1_Terra-FM1_Test_000000.\$date/ TempENV.dat	ASCII	Created by CER2.1P1 to pass environment variables used in FORTRAN to IDL program.
CER2.2_Terra-FM1_Test_000000.\$date/ ShmMem	ASCII	Used in production of metadata for all PGEs.

Note: These files will be generated on execution of Subsystem software and are not included in the tar file. All references in this table to date = data date in the form YYYYMM (4-digit year, 2-digit month) or YYYYMMDD (4-digit year, 2-digit month, 2-digit day).